

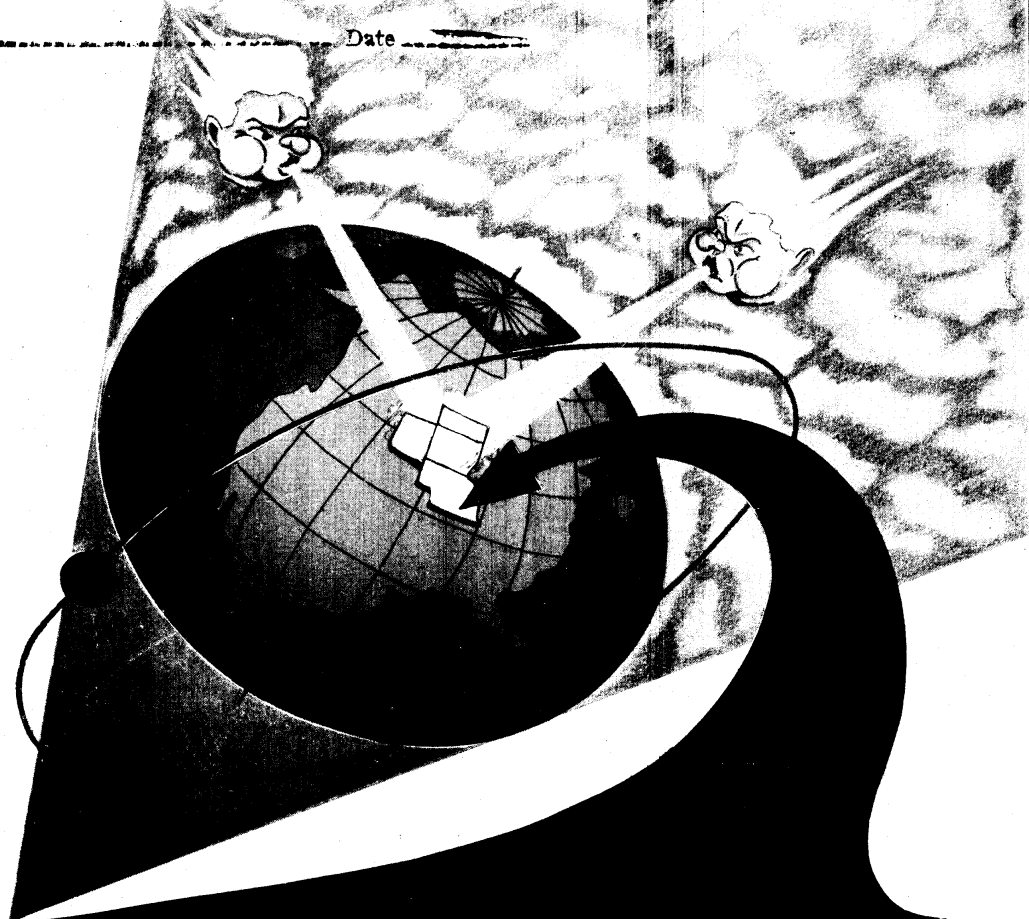
N-16675



FIFTH ARMY  
DISASTER OPERATION

Instructor's Reading Room

Name \_\_\_\_\_ Date \_\_\_\_\_



# SNOWBOUND

NEBRASKA, WYOMING, SOUTH DAKOTA  
AND NORTH DAKOTA



SEP 12 1949

29 JANUARY - MARCH 1949

Incl 18

No PO Rec

HEADQUARTERS  
FIFTH ARMY DISASTER FORCE "SNOWBOUND"  
206 South 19th Street  
Omaha, Nebraska

16 March 1949

SUBJECT: Final History of Operation "Snowbound"

TO: The Commanding General  
Headquarters Fifth Army  
1660 East Hyde Park Boulevard  
Chicago, Illinois

In compliance with instructions contained in letter, Headquarters Fifth Army, subject, "Fifth Army Disaster Force 'Snowbound'", dated 29 January 1949, the final history of Operation "Snowbound" is submitted.

*George C. Stewart*

GEORGE C. STEWART  
Brigadier General, USA  
Commanding



# ○ HISTORY ○

## FIFTH ARMY DISASTER FORCE SNOWBOUND

---

NEBRASKA

WYOMING

NORTH DAKOTA

SOUTH DAKOTA



JANUARY to MARCH - 1949

# C O N T E N T S

## PART I - TEXT

	<u>Par.</u>	<u>Page</u>
<u>OBJECT</u>	1	1
<u>THE DIRECTIVE</u>	2	1
<u>SYLLABUS</u>	3	1 - 2
<u>SITUATION AS OF 1100 HOURS 29 JANUARY</u>	4 - 5	2 - 3
<u>THE DISASTER AREA</u>	6	3
<u>AUTHORITY AND COMMAND</u>	7	3
<u>ORGANIZATION</u>	8 - 10	3 - 4
<u>OPERATIONS</u>	11 - 26	4 - 8
<u>AIR FORCE</u>	27 - 29	8 - 9
<u>RED CROSS</u>	30	9
<u>NAVY</u>	31	9
<u>NATIONAL GUARD</u>	32	9 - 10
<u>EQUIPMENT</u>	33	10
<u>MAINTENANCE AND SUPPLY</u>	34	10
<u>COMMUNICATIONS</u>	35	10
<u>PERSONNEL</u>	36	11
<u>FISCAL</u>	37	11 - 12
<u>PUBLIC INFORMATION</u>	38	12
<u>MEDICAL</u>	39	12 - 12a
<u>STATUS - 17 MARCH</u>	40	12a

## PART II - OBSERVATIONS AND LESSONS

<u>INTRODUCTION</u>	41	15
<u>SUMMARY</u>	42 - 61	15 - 18
<u>CIVILIAN RELATIONS</u>	62 - 64	18 - 19
<u>INFORMATION AND INTELLIGENCE</u>	65 - 74	19 - 21
<u>OPERATIONS</u>	75 - 90	22 - 25
<u>LOGISTICS</u>	91 - 110	25 - 29
<u>COMMUNICATIONS</u>	111 - 112	29
<u>FIELD EXPEDIENTS</u>	113 - 117	29 - 30

CONTENTS (Cont'd)

PART III - APPENDICES

	<u>Appendix Letter</u>
<u>LETTER FIFTH ARMY - SUBJECT: DISASTER FORCE "SNOWBOUND"</u>	A
<u>STATION LIST</u>	B
<u>MOBILIZATION AND DEMOBILIZATION</u>	C
<u>LETTERS TO CIVILIAN DISASTER COMMITTEES</u>	D
<u>MAJOR EQUIPMENT BY TYPES</u>	E
<u>DAILY FIELD REPORT FORMS</u>	F
<u>"BLIZZARD PLAN"</u>	G
<u>INITIAL INSTRUCTIONS</u>	H
<u>DEMOBILIZATION PLAN</u>	I
<u>STAND-BY EQUIPMENT</u>	J
<u>LETTER TO CG TENTH AF</u>	K
<u>AIR FORCE OPERATIONS</u>	L
<u>LETTER, ARMY - AIR FORCE, POLICY</u>	M
<u>RED CROSS</u>	N
<u>LETTER, ADMIRAL, NINTH NAVAL DIST</u>	O
<u>GENERAL PERFORMANCE SNOW REMOVAL EQUIPMENT</u>	P
<u>ENGINEER</u>	Q
<u>ORDNANCE</u>	R
<u>QUARTERMASTER</u>	S
<u>TRANSPORTATION</u>	T
<u>RADIO STATIONS, EQUIPMENT AND PERSONNEL</u>	U
<u>RADIO TRAFFIC LOAD</u>	V
<u>PERSONNEL SOURCES</u>	W
<u>INSTRUCTIONS ON COMMENDATION RIBBON</u>	X
<u>LIST OF AWARDS</u>	Y
<u>CASUALTIES</u>	Z
<u>FISCAL</u>	AA
<u>MEDICAL</u>	BB
<u>PHOTOGRAPHS</u>	CC
<u>CHART - ORIGINAL ORGANIZATION</u>	DD
<u>CHART - FINAL ORGANIZATION</u>	EE
<u>CHART - BUILD-UP SNOW REMOVAL EQUIPMENT</u>	FF

CONTENTS (Cont'd)

	<u>Appendix Letter</u>
<u>CHART - AIR FORCE OPERATIONS</u>	GG
<u>DIAGRAM - RADIO NET</u>	HH
<u>DIAGRAM - COMMUNICATION NET</u>	II
<u>CHART - PERSONNEL BUILD-UP</u>	JJ
<u>TYPICAL PRESS CLIPPINGS</u>	KK
<u>TYPICAL LETTERS FROM CIVILIAN ORGANIZATIONS</u>	LL
<u>CHART - SUMMARY OF RESULTS</u>	MM

HISTORY  
FIFTH ARMY  
DISASTER FORCE SNOWBOUND

PART I

TEXT

FIFTH ARMY DISASTER FORCE "SNOWBOUND"

"No enemy here shall he see  
But winter and rough weather"

Shakespeare - "As You Like It"

PART I - TEXT

OBJECT

1. The object of this report is threefold:
  - a. To record the experience of Fifth Army Disaster Force "Snowbound"
  - b. To furnish a guide for future operations of similar nature
  - c. To extract lessons applicable to military operations

THE DIRECTIVE

2. A telegraphic directive from Headquarters, Fifth Army, Chicago, Illinois, was received in Omaha, Nebraska, at 11:00 A.M., 29 January 1949, designating Major General Lewis A. Pick, Division Engineer of the Missouri River Division, Corps of Engineers, as Commander, Fifth Army Disaster Force "Snowbound", and instructing him "to direct all appropriate activities within the Fifth Army Area to provide relief for snowbound families and livestock".

SYLLABUS

3. Speed was the keynote to this operation: Speed to organize. Speed to mobilize men and equipment. Speed to get the job done quickly. There was no time for detailed reconnaissance prior to preparation of plans. Each action, at staff level or in the field, was an emergency action. Each day's delay meant loss of cattle, continued human suffering and possible loss of life.

The area nearly equalled France in size. Many sections were thinly populated. Communities were widely separated. Most of the roads and railroads were blocked at least in part. Yet speed of movement was essential.

All sources of personnel, equipment and transportation were utilized to get the job going. Top level conferences were held with railroad officials to insure their assistance. Surveys were made to insure adequate communications throughout the area. Telephone conferences were held with governors of the states concerned and with other state and Federal officials, to insure immediate cooperation all down the line.

At 11 A.M. on the 29th of January the order was received. That afternoon instructions were issued to District Engineers to load equipment; to start moving officers, supervisors, foremen and mechanics of the Missouri River Division to designated stations in the field. By nightfall, additional staff officers had been flown in from Fifth Army, the Operation Headquarters in Omaha was established and functioning, and area offices had been established in Ainsworth, Nebraska and Rapid City and Pierre, South Dakota. By Sunday afternoon, fifteen additional officers had been flown in from Fort Belvoir, Virginia, had been briefed and were on their way to field assignments. By Sunday night all sub-area offices were open except one--personnel for this station were delayed until the next morning by impassable roads. By Monday afternoon Sub-Area engineers had contacted relief committees or county commissioners. Plans for the local operations had been made. Work which had been initiated by the states was taken over and pushed by Operation "Snowbound" personnel. By Tuesday new equipment was arriving and by midnight 6,853 snowbound people had been relieved; 46,000 cattle had been given access to feed. 175 miles of road had been

cleared. By Wednesday the flow of equipment into the area was mounting in volume. New disaster areas were declared. The operation was expanding. Each day swelled the ranks of men and equipment, and new areas were freed from the grips of the storm.

As the operation got into full swing and results were being achieved, blizzard conditions struck again at western Nebraska, Wyoming and South Dakota. This storm was characterized by very high winds and some snow. It continued from the 5th to the 15th of February and called for new efforts from the "Snowbound" personnel.

On the 12th of February six counties of North Dakota were declared in the emergency area, then followed six more counties on the 13th, ten on the 14th and finally six more counties on the 23rd. The requirement was estimated at 450 major pieces of equipment to dig them out.

On 26 February Major General Pick was called to Washington to assume the duties of Chief of Engineers and command of the operation passed to Brigadier General Stewart.

By the first of March it appeared that the end was in sight. However, a new crisis was developing in North Dakota and new appeals were made for help. Old Man Winter was not yet licked.

General Stewart flew to North Dakota for a personal reconnaissance of the new critical area and liaison with state officials. As a result, the headquarters of "Snowbound" was flown to Bismarck on the morning of 4 March. By that night the new headquarters was set up and operating from Ft. Lincoln, leaving only a small rear echelon in Omaha.

Still more counties were added in North Dakota on 5 and 11 March, extending the disaster area from Minnesota to Montana along the international boundary.

By 15 March the last of the affected areas had been freed and final demobilization commenced.

Operation "Snowbound" had operated in an area of 193,193 square miles in four states populated by 1,214,592 people. Estimates by the field forces during the operation showed that 4,011,184 cattle had been saved from possible starvation, and 243,780 people had been freed from the clutches of the storm. To achieve this end, 115,138 miles of roads had been cleared of snow by 1,600 major pieces of equipment operated and supervised by 6,000 men.

#### SITUATION AS OF 1100 HOURS, 29 JANUARY

4. General. During the months of November, December and January, the states of Nebraska, Wyoming, and South Dakota experienced severe weather conditions, accompanied by an unusually heavy massing of snow and ice with extensive drifts caused by high winds. The customary agencies of these states and the local authorities were employed to combat this condition. However, the accumulation of snow outstripped the capabilities of these resources.

5. The Emergency. There were three separate blizzard periods, the first commencing 13 November, the second 2 January and the third 26 January. Before the area completely recovered from the first, the second descended and the third followed hard on the heels of the second. By the end of January, many railroad lines, highways, towns, ranches, and cattle herds had been isolated. The agencies working to relieve this situation were unable to make sufficient progress with the resources at hand. During this period the Air Force "Operation Hayride" was initiated to relieve starvation among isolated herds of cattle. However, it soon became obvious that for the relief of human distress, which had grown to serious proportions by the 29th of January, a large scale snow removal operation would be required. On 29 January the President, at the request of the states concerned, declared the snowbound area a "disaster area" and authorized the expenditure of Federal funds, and the use of the resources of the National Military Establishment for rendering aid to the civil authorities

in the snowbound area. The Department of the Army was designated by the Secretary of Defense to direct the operation. Photographs shown in Appendix CC give an idea of the conditions existing in this area at this time.

#### DISASTER AREA

6. The area in which this operation took place encompassed approximately three-quarters of the states of Nebraska and North Dakota and one-half each of the states of Wyoming and South Dakota, comprising in all 193,193 square miles and populated by 1,214,592 people. These people were affected physically and economically in various degrees by the unusual weather conditions. This area also contained several million cattle and farm animals, many of which were isolated and without feed. The loss of any sizeable number of these cattle would have had a serious impact upon the economy of the entire area and perhaps even upon the economy of the whole country. (See map attached.)

#### AUTHORITY AND COMMAND

7. a. The Fifth Army Disaster Force "Snowbound" was instituted 29 January on orders from Headquarters, Fifth Army, copy of which is attached as Appendix A. Further instructions and authority for this operation are contained in AR 500-60 and Fifth Army Disaster Plan 1948. Major General Lewis A. Pick, United States Army, was assigned to command the operation. On 1 February Brigadier General George C. Stewart, United States Army, was assigned as Assistant Commander of the Force.

b. Command of the Fifth Army Disaster Force "Snowbound" was assumed by Brigadier General George C. Stewart, United States Army, on 27 February 1949, vice Major General Lewis A. Pick, United States Army, upon the latter's appointment as Chief of the Corps of Engineers. Copy of orders is attached at Appendix A.

#### ORGANIZATION

8. General. The original organization set up to implement the plan of the Fifth Army is shown in Appendix DD, attached. This organization envisaged operations only in north and northwest Nebraska, north of the Platte River and west of the Missouri River in South Dakota. The disaster area in Wyoming had not yet been delineated. However, the organization was flexible to allow for expansion, if needed. As greater efforts were put into opening roads into the stricken area, more information became available, and it was evident that the disaster area extended considerably beyond that originally conceived; furthermore, continuing snowstorms and blizzards caused other areas to become "disaster areas". The formation of additional Areas and Sub-Areas was required. Basically, the original organization was not changed, but rather expanded to take in additional areas as they were declared by the governors and referred to the Army by the Federal Works Agency Coordinator. The final organization is shown in Appendix EE and map, both attached. The Missouri River Division of the Corps of Engineers was the framework around which the new organization was built. All of the resources of this division, including personnel, offices, districts, equipment, etc., were available to the Commanding General to contribute to the operation, and these resources were supplemented by other personnel and equipment drawn from Fifth Army or hired from contractors. Appendix B shows Station List as redesignated 6 March, and Appendix C indicates the mobilization, demobilization and duration of the various Areas and Sub-Areas.

9. Operating Level. No standard pattern was prescribed for organization within the Sub-Areas due to the variety of problems encountered. Generally speaking, supervisory offices were established in county seats in the charge of Army officers who maintained liaison with local civil authorities and directed activities within the county. Groups of equipment and personnel were formed under a particular contractor, Army officer or civilian superintendent, and the group was given responsibility for operating within a zone. Ancillary equipment was assigned to a group to give it a measure of self-sufficiency. Groups in turn could be broken down to a party of three or four dozers with a foreman in charge, or even to single dozers for certain limited missions.



10. Liaison. To fully coordinate the relief work of the various states with that of the Army, liaison was established with the governors of the States of Nebraska, South Dakota, North Dakota and Wyoming. Since subordinate headquarters of Operation "Snowbound" were established in Pierre, South Dakota, Cheyenne, Wyoming, and Bismarck, North Dakota, the officers in charge of these offices functioned as the liaison officers for the states concerned. However, in the State of Nebraska, the State Capitol lay outside of the disaster area. It therefore became necessary to establish a liaison office in that city. In this manner, the resources of each state were integrated into the Army program for Operation "Snowbound".

#### OPERATIONS

11. General. This operation may be defined as "employment of troops and supplies in connection with disaster relief", as described in AR 500-60. When the governor of a particular state deemed a situation to be beyond his control, he called upon the Federal Works Agency Coordinator in his particular district and declared the area in question to be a "disaster area", requesting the assistance of the Federal Government. In turn, the F.W.A. Coordinator informed the Commanding General, Operation "Snowbound", and requested assistance from the military establishment. The Army was not authorized to operate in any area which had not been declared a "disaster area" by the governor and for which assistance of the military had not been requested. Broadly, the operation falls into two categories, which went on simultaneously:

a. The relief of stricken or isolated communities and farms, including relief of human suffering and saving livestock.

b. The clearance of ice and snow from rail and road communications.

12. Coordination and Control. Headquarters Operation "Snowbound" was the central agency for coordinating the work of all federal, military, Red Cross, state, county, and local agencies involved, with the exception of the equipment of the state highway commissions, with whom close liaison was maintained and operations coordinated. The agency best fitted for and most available was assigned to any particular task. There was no distinct delineation of functions between the various agencies, but generally the Red Cross, using National Guard, Army, Air Force or contracted transportation, and local committees were chiefly concerned with the relief of distressed persons; while the Army with both organic and contractor equipment was chiefly concerned with the large scale road clearance operation, clearing access roads to ranches and paths to cattle or hay. Army Area and Sub-Area Engineers were in over-all coordination of both phases. The railways, using their specialized equipment, cleared their own roads; however, they were given assistance where necessary by the Army. Instances of Army assistance to the railroads were relatively few and limited to dozers working with railway snowplows. Since the number of snowplows that can work on a railway is limited to the tracks, sufficient equipment was on hand for most of their requirements. However, the railways did not have a reserve for a second blizzard nor for breakdown replacements. This hampered snow clearance on railways at times, particularly on branch lines and even on main lines during the recurring blizzards in Wyoming in early February. The Army located additional equipment outside of the disaster area, which was available in case of emergency but was not required.

13. Reconnaissance. Ample aircraft were available to Area and Sub-Area Engineers for air reconnaissance to supplement ground reconnaissance of the area. In the initial stages air reconnaissance was the only means of gaining intelligence in some isolated area. Weasels were employed for more detailed but more restricted ground reconnaissance. Contact was maintained between air and ground during reconnaissance in some situations to worthwhile effect.

14. Civilian Disaster Committees. Disaster Committees were established on state, county and town level in the various states of the snowbound area. These committees were a most valuable source of information. Indeed, their services were practically indispensable. Their efforts to assist the Army in the accomplishment of its mission were untiring. Within their area they provided the local Army officers with maps, guides familiar with the locality, locations of individuals and communities who were in need of assistance,

helped to establish priority and by reviewing individual requests took a large part of the load off the shoulders of the Army. These committees also gave a helping hand to the personnel of Operation "Snowbound", assisted them in seeing to their needs and their comforts. These committees were made up of local individuals who gave unstintingly of their time and resources to assist in making the operation a complete success. The importance of the contribution of these committees to the operation is manifest by the many letters written by the Commanding General of Operation "Snowbound" to those committees expressing his appreciation for their work and cooperation. An example of this kind of letter is attached in Appendix D.

15. Decentralization. Decentralization was the order of the day. The Area and Sub-Area Engineers were instructed to take over rental equipment initially employed by the state on snow removal. Furthermore, in the initial stages the field engineers were authorized to contract for any additional suitable equipment that happened to be in their areas. Based on information from local sources and in cooperation with local disaster committees, or county commissioners, they set up priorities, planned the employment of their available equipment and requested Headquarters Operation "Snowbound" to furnish additional equipment as required.

16. Allocations and Routing. Headquarters allocated incoming equipment on the basis of priorities established from studies of field reports received throughout the day and night from Area and Sub-Area Engineers. Routing of equipment into the disaster area required careful planning and coordination because of the many blocked highways and railways. Coordination and planning were also required for the timely arrival of military personnel who were to operate military equipment. A sub-section was set up within the Transportation Section of Headquarters at Omaha specifically to keep up-to-date latest reports on highways and railways which were open or blocked. These data allowed the Transportation Section to divert or reroute truck and railway shipments to avoid badly needed equipment being caught in a deadend with resulting delay. Some idea of the magnitude of this operation can be grasped from the fact that it is the largest bulldozer operation in history. By comparison, there were 394 bulldozers in operation at the peak of construction on the Ledo Road during the late war. During the peak of Operation "Snowbound", there were 1,654 major pieces of equipment being operated by the Army and of this number 1,320 were bulldozers. A breakdown of equipment by general types is shown in Appendix E, the daily build-up is shown in Appendix FF, and further details will be found under Section "EQUIPMENT". The transportation requirements for moving this equipment into the disaster area and transporting supplies and equipment to maintain the operation was a large task in itself.

17. Continuous Operation. Operations continued 24 hours a day seven days a week. Each piece of equipment had relief crews permitting continuous or practically continuous operation. The operation was set up on the basis of two 10-hour shifts daily and 4 hours for maintenance. Many contractors, however, worked the full 24 hours with minimum maintenance time off. Maintenance teams were similarly organized for 'round the clock' operations.

18. Reports. Daily Operation Reports, compiled from similar reports from the field (See Annex F for sample field report form), were made to Fifth Army showing the progress of the operation. Included as annexes were summaries of activities in the following branches: Air; Red Cross; Supply (including Ordnance, Engineers and Quartermaster); Communications; Transportation; Fiscal; Personnel; and Public Relations.

19. Supply. Army Supply, other than providing snow removal equipment, was confined to the supply and maintenance of Armed Forces personnel and equipment. Fuel and maintenance for contractors' equipment were furnished by the contractors concerned, who also bed and housed their own men. All relief supplies were furnished by the Red Cross or local agencies.

20. Task Forces. In the latter stages of the operation it was found necessary to organize mobile units somewhat on the order of trouble-shooting task forces for each area. In the event of trouble they were quickly shifted from one locality to another for clearing drifts as they occurred. These mobile units were generally all mounted on wheels and consisted of a snowplow, dozers mounted on low-boys, graders, and ancillary vehicles.

21. Mobility. In order to increase the mobility of the operational teams of snowplows and bulldozers, it was found desirable to send out low-boys (transporters) so that teams could bound forward when an open stretch of highway was reached. Furthermore, pools of transporters or low-boys at key points facilitated the shuttling of heavy equipment from point to point. In connection with the "blizzard plan" (See Phase 2, below, and Appendix G), low-boy pools at key points also assisted in shuttling equipment to strategic points in case of further heavy snows or blizzards striking the area.

22. Weather. The operation was carried out in heavy snow averaging 36 inches deep on the level in most places. Maximum level depth reported was 104 inches northwest of Sundance, Wyoming. In some areas there had been several thaws which resulted in layers of ice in between layers of snow. High winds, characteristic of this section of the country, had drifted the snow into highway and railway cuts, in the lee of any object, and in some cases had built up to a depth of thirty feet. These drifts, in many cases, were heavily compacted by wind action. During the operation various sections experienced further snowfall and drifting was a constant menace. The blizzard condition during the second week of the operation in Wyoming built up drifts that in some places covered entire houses. Temperatures were as low as 32 degrees below zero. This temperature was recorded in Newcastle, Wyoming, 13 February 1949.

23. Phasing. The operation may be considered in three phases. The phases overlapped as to time due to the termination of the emergency in one area while additional areas were being formed due to recurring blizzards or drifting snow. The phases are:

- Phase 1, Organizational
- Phase 2, Operational
- Phase 3, Demobilization

24. Phase 1, Organizational.

a. Initial Tasks. Upon notification by Fifth Army to put into effect Operation "Snowbound", a large part of the organization of the Missouri River Division was diverted into appropriate sections in Operation "Snowbound". A survey was made to establish the number of personnel required to augment the existing staff and field force, and these additional personnel were requested from Fifth Army. Equipment, additional to that employed by the states and suitable for snow clearance, was located and instructions were issued for moving it into the area. Some of this equipment was military, but the majority was contractor owned. Generally speaking, this period was spent in continuing the work commenced by the states, augmenting that work where possible, organizing the field force and staff, mobilizing equipment, and taking over under federal contract equipment which had been rented by the states. Incoming officers were briefed and sent out to their respective assignments. Area and Sub-Area officers were given their initial orders (See Appendix H).

b. Intelligence. The greatest single difficulty during this phase of the operation was gaining accurate intelligence of conditions in the field. Ground communication was very difficult and in many places indeed impossible, due to blocked roads. Although all trunk circuits were in operation by telephone and telegraph, there were many small communities and isolated farms which were cut off from these methods of communication. Travel on even the main highways was slow. Some officers who were despatched from Omaha to their Sub-Areas on Sunday, 30 January, did not arrive until Monday morning, although they travelled all night.

c. Expansion.

(1) By 3 February, the disaster area had grown from an operation in north and northwest Nebraska and the western half of South Dakota to include approximately three-fourths of the State of Nebraska, plus half of the State of Wyoming, and two additional counties east of the Missouri River in South Dakota. The extension of the area was based on requests of the governors concerned and approved by the appropriate F.W.A. Coordinator, as mentioned above.

(2) The situation in North Dakota became critical on 12 February due to the same blizzards which affected South Dakota, and Operation "Snowbound" was requested by the Federal Works Agency Coordinator to move into that state on the same basis as operations were being conducted in the other three states. The original disaster area in North Dakota comprised six counties along the southern border west of the Missouri River. Eventually the area expanded to include approximately three-quarters of North Dakota. The first equipment arrived in the disaster area of North Dakota 13 February. Since other areas were being demobilized, some personnel and equipment were shifted from completed areas to the new area; other equipment was rented locally and from the adjacent states of Minnesota and Montana.

25. Phase 2, Operational.

a. General. At the commencement of this phase, organization of the field force had been completed, practically all of the equipment formerly leased by the state had been taken over under Federal contract, field headquarters had been established, and outside equipment was being received into the area in sizeable quantity. The priority of work was: one -- relief of human suffering; two -- clear lanes, paths and trails to bring cattle to feed or feed to cattle. In support of these two objectives, it was necessary to clear, in coordination with the local state highway organizations, highways and secondary roads throughout the countryside. Thus, rescue and road clearance went on simultaneously. This meant a progressively expanding operation. The buildup of equipment for this work is shown in Appendix FF, attached. All contractor equipment, formerly under state control, had been taken over by the Army by the night of 3/4 February.

b. Expanding Operations. As the work of clearing roads progressed, teams worked farther and farther away from their bases of operation in the various towns. Low-boy pools were located at key points to assist in shuttling equipment to strategic areas in case of heavy snows or blizzards.

c. "Blizzard Plan". As a precaution against further blizzards, heavy snowfall or severe drifting, a "Blizzard Plan" was adopted throughout the area of operations. The object of this plan was to concentrate equipment to clear major communication routes and prevent equipment and personnel from being cut off from their base of supply. See Appendix G attached.

d. Effect of Additional Blizzards and Drifting. Further snow storms and high winds caused considerable blocking of cleared railways and highways in Wyoming and South Dakota during the period 5-15 February. During this period, North Dakota felt the effects of the same blizzard and the first counties in that state were declared disaster areas. In South Dakota alone it was reported at one time that all of the roads previously cleared had drifted closed and many had been reopened repeatedly. Initial estimates on cattle losses from cattlemen, associations, and others indicated that losses among cattle vary from 2 to 9 percent. However, experienced observers predict that the aftermath of this severe weather will probably result in a high mortality rate among lambs and calves later in the spring.

e. Liaison. Liaison between adjacent Areas and Sub-Areas was maintained by the Area and Sub-Area Engineers concerned. It was found that this was particularly important during the latter stages of Phase 2 to insure that a road which was cleared up to an area boundary was not overlooked by the adjacent Area or Sub-Area. No specific personnel were assigned for the job of liaison. Generally speaking, this liaison was carried out by personal contact or by telephone between Area and Sub-Area Engineers.

f. Supply and Maintenance. Since the Army personnel operating within the area were widely scattered in small groups, it was found to be impracticable to operate unit messes. It was, therefore, decided to put the majority of men on a per diem basis so that they could individually care for their daily needs. Agent Finance Officers were appointed to facilitate paying of these troops.

## 26. Phase 3, Demobilization.

a. Object. The object of this phase was to terminate contracts with contractors and inspect, service and ship military equipment to its destination as rapidly as possible. Personnel were likewise returned to their permanent station as quickly as the requirements of the job permitted.

b. Procedure. The demobilization phase commenced before the termination of the operational phase. Concurrent with operations in the more persistent areas, demobilization was undertaken by counties, or parts of counties, as work was completed. Equipment no longer required in an Area or Sub-Area was either shifted to other distressed areas or contracts terminated. When operations progressed to the point where the objective was about to be accomplished, the Sub-Area Engineer accompanied by the local county commissioners, or disaster committee, surveyed the county or district. When agreement was reached as to the date on which work would be complete, the Sub-Area Engineer reported to headquarters that operations would be completed in that portion of his Sub-Area by a certain date and that concurrence had been obtained from the local authorities. Headquarters then advised the Governor and asked his concurrence to demobilize in the county or district concerned. Upon his approval, the F.W.A. Coordinator was informed. He, in turn, authorized the Commanding General to demobilize men and equipment on the date agreed upon by the concurring parties. Headquarters then instructed the Area and Sub-Area Engineers to demobilize in accordance with the agreed date. Detailed instructions for demobilization are given in Appendix I, attached.

c. Stand-by Equipment. As a precaution against further blizzards during the remaining winter months, some of the states requested that some Army equipment be left behind as a residual reserve when demobilization was authorized. These requests were reviewed and analyzed, and after approval by Headquarters, Fifth Army, provisions were made for providing the minimum requirements by turning the equipment over to the National Guard of the states concerned on a stand-by basis. See Appendix J for types and locations of equipment on stand-by basis.

## AIR FORCE

27. Cooperation. This operation merits recording as a classic of harmonious teamwork between the Army and the Air Force. The Tenth Air Force threw in all of their resources to succor the distressed people of the snowbound area and their livestock. Their flight crews worked unstintingly over hazardous terrain and in all kinds of weather to fulfill every mission requested. Their activities ranged from the rescue of snowbound, isolated individuals to the air dropping of hay to livestock which were barred from their haystacks by the heavy snow and drifts. Employing 76 aircraft of all types from helicopters to "flying box cars", the C-82s, they carried out photographic missions to record the effects of the blizzard, reconnaissance missions, without which Operation "Snowbound" would have been all but blind, haylift missions, supply of parts, equipment, men and even weasels, all under very hazardous flying conditions. Their tireless work and willingness to take on any mission at any time were exemplary and indeed inspiring to those who looked to them for help. The 809th Engineer Aviation Battalion, 3450th Technical Training Wing, Ft. Francis E. Warren, aided in the clearing of Sub-Area X around Lusk, Casper, Rawlins, Laramie, and Cheyenne, Wyoming. This unit of 20 officers and 233 enlisted men operated 27 dozers and 12 patrol graders from 30 January to 25 February. Commanding General of the Fifth Army Disaster Force "Snowbound" expressed extreme gratitude at the performance and spirit of Air Force in a letter to the Commanding General of Tenth Air Force, copy of which is attached to Appendix K. The press throughout the area paid tribute to the efficiency and effectiveness of the Air Force operation in many news items and editorials. These articles expressed the appreciation of the people and commended the Air Force for their contribution to the relief work.

28. Coordination. The Air Force had been involved in this operation since the early part of January, lifting feed to isolated cattle herds. As the situation became worse, their mission was changed to include the relief of human distress, as well, and eventually Operation "Haylift"

became a part of Operation "Snowbound". In order to avoid duplication of effort and to coordinate over-all operations, elements of the Air Force engaged in disaster operations operated under the disaster force commander. This was successfully accomplished through an agreement with Tenth Air Force whereby a representative of the Commanding General, Tenth Air Force, was designated as Air Officer on the Staff of the Commanding General of the Disaster Force. Under this arrangement decisions as to what missions were to be flown were made by the disaster force commander while command and administrative functions of Air Force personnel and equipment remained with the Air Force.

29. Haylift Procedure. Requests for air-lifts of hay originated with the rancher and were screened by local civilian authorities, a routine which had been in effect since Operation "Hayride" began. The local authorities, after establishing the merits of the case, requested Headquarters Operation "Snowbound" to transport the hay, which had been procured by the rancher, to either a nearby landing field for vehicular distribution or to an air drop where the isolated herd was located. Upon receipt of these requests, Headquarters took steps to fulfill the request and at the same time checked through the Sub-Area Engineer to verify: one -- was the need urgent; two -- was a ground route feasible. Once a haylift was started, every effort was made to open up normal routes of communication and supply to that area in order to terminate the air transport at the earliest possible moment consistent with the objective of Operation "Snowbound". Attached as Appendices L and GG is a brief summary of the Air Force operations during the period of this report, and letter Headquarters Operation "Snowbound" to Air Force Officer establishing policy regarding Air Force operation is attached at Appendix M.

#### RED CROSS

30. The performance of the Red Cross during this operation was characteristic of the usual high standard of that agency. The local chapters had been in operation in each community before the area was declared a disaster area and, upon formation of the force, their operations were coordinated with Operation "Snowbound". The national organization established an office at Headquarters Operation "Snowbound" to insure complete liaison and cooperation. For further detailed information regarding the operation of the Army-Red Cross team, see ARC pamphlet "When Disaster Strikes" and AR 500-60. A summary of Red Cross activities during this operation is given as Appendix N, attached.

#### NAVY

31. The Ninth Naval District contributed equipment from the Hastings Naval Ammunition Depot, Hastings, Nebraska, and furnished radio operators with sets which were integrated into the operators radio network. In addition, Naval personnel were furnished from the Naval Reserve Centers in Omaha and Lincoln, Nebraska, Denver, Colorado, and Cheyenne, Wyoming. These personnel did outstanding work in manning the radio stations and contributed materially to the success of the operation. The high standard of training, technical proficiency, and willingness of these personnel was commendatory. Particular credit is due the personnel of the Naval Ammunition Depot, Hastings, Nebraska, for their splendid work in clearing roads between Holdredge and McCook, Nebraska, in connection with Operation "Snowbound". Naval personnel engaged in this operation were thirty-five officers, warrant officers and ratings, including both regulars and reserves. See letter to Commandant, Ninth Naval District, attached as Appendix O and radio net Appendices U and HH.

#### NATIONAL GUARD

32. By agreement with the Governors of Nebraska and Wyoming, the Army coordinated certain activities of the National Guard with the other agencies involved.

a. Nebraska. The National Guard continued rescue work with the Red Cross which they had commenced early in January. This work consisted chiefly of transporting relief supplies and relieving human distress in conjunction with the Red Cross. The organization of the teams varied

depending upon local conditions; the following was a typical team: One jeep, one 2-1/2-ton truck and nine men. In addition, a general service team operated the airfields at Alliance and Norfolk and two maintenance teams performed field maintenance along with the Army Ordnance teams. One member of the National Guard worked as an operator in the "Snowbound" radio net at O'Neill.

b. Wyoming. In early January, the National Guard of Wyoming established six weasel teams for rescue work in conjunction with the Red Cross. These teams continued their work after the formation of "Snowbound" and their activities were coordinated by the Army.

#### EQUIPMENT

33. Generally speaking, the rental snow removal equipment came from within the states affected or from the states immediately adjacent thereto. Further reserve pools of equipment, both civil and military, were located at more distant parts of the country and measures taken to promptly ship into the disaster area should their use become necessary. For general remarks on equipment performance, see Appendix P, attached; for further comments on performance of equipment, see Part II, "OBSERVATIONS AND LESSONS" and Engineers Appendix.

#### MAINTENANCE AND SUPPLY

34. a. Military. In order to insure continuous operation of military equipment in the field, the Army provided five engineer maintenance teams and ten ordnance maintenance teams. These teams were fully mobile and were located throughout the area to facilitate the maintenance and repair of military equipment. They were organized to operate day and night and were prepared to handle first and second echelon work and in many cases improvised even further. Quartermaster supply was effected through existing military establishments throughout the area.

b. Civilian. Contracts for civilian equipment specified that the contractor would provide his own maintenance. In every case POL was furnished by the contractor. Attached hereto are comments from the Engineer, Ordnance, Quartermaster and Transportation Sections of the staff as Appendices Q, R, S and T, respectively.

#### COMMUNICATIONS

35. The fact that throughout the entire operation the commercial trunk telephone and telegraph lines were not seriously affected is testimony to the excellence of maintenance and construction of the telephone and telegraph system. Even during the most severe blizzards the lines were "in" and permitted control of the operation to be exercised through these means. TWX was established from the Headquarters Operation "Snowbound" in Omaha to Fifth Army and to the Department of the Army through the Military Communications Administration Network. Many local lines, however, were out at various times, and this situation seriously handicapped the collection of information in the early stages by the field force. As a precautionary measure against future storms and to augment the commercial telephone and telegraph system, a radio network was established using the combined resources of Army, Navy, Air Force and National Guard within the area. This network functioned on a 24-hour basis until 2 March when the emergency net was no longer required and all emergency stations closed down. To further supplement the communications system, and as further assurance against interruptions in line communication and isolation of towns, 68 amateur radio stations were tied into their net on a stand-by basis. These stations were scattered over the entire area and checked into their net daily at scheduled hours. Commercial broadcasting stations also cooperated in broadcasting information and announcements and were available for assistance in cases of emergency. Layout of the communications system is given in Appendices HH, II and other data are given in Appendices U and V.

## PERSONNEL

36. a. Source. At the peak there were a total of 6,237 personnel employed on this operation who were under control of Disaster Force "Snowbound". The source of these people is given below; for details, see Appendices W and JJ attached:

- Army
- Air Force
- Navy
- Missouri River Division, Corps of Engineers (including Civil Service Employees)
- National Guard
- Red Cross
- Civil Air Patrol
- Civilian Contractors
- Labor Unions

b. Awards and Decorations. Three types of awards were presented for outstanding meritorious conduct in performance of duties in connection with Operation "Snowbound".

(1) Commendation Ribbon. By special permission of the Department of the Army, a limited number of these awards was authorized for Army personnel on active duty in the Federal service for outstanding performance of duty.

(2) Certificate "Commendation for Meritorious Civilian Service" by Department of the Army. This award was authorized for a limited number of Government Civil Service personnel under conditions comparable to the Commendation Ribbon above.

(3) "Certificate of Achievement". This award was authorized for civilians employed in any capacity during Operation "Snowbound", provided the source of their pay was Federal funds. The number of these awards was also limited to deserving cases; however, the conditions under which they were made were less stringent than for paragraphs (1) and (2) above.

(See Appendix X for Fifth Army instructions regarding the Commendation Ribbon and Appendix Y for awards and decorations to individuals.)

c. Casualties. During the course of the operation, one military and six civilian personnel who were under control of Operation "Snowbound" lost their lives through accidents. Details are given in Appendix Z.

## FISCAL

37. All fiscal matters within Operation "Snowbound" were controlled by the Fiscal Branch of the Missouri River Division, Corps of Engineers in Omaha. All equipment was hired by Purchasing and Contracting Officers of the Missouri River Division on uniform rental rates as established for this particular operation, and by accomplishment of a modified "Equipment Rental Agreement", which was augmented at a later date by a contract. (Copy of sample "Equipment Rental Agreement" is attached at Appendix AA.)

Equipment required for Disaster Force "Snowbound" activities was procured from every available source within a reasonable distance of the site of operations. Approximately 300 pieces of equipment had been ordered to proceed to specific work sites in Nebraska by the Adjutant General, Nebraska National Guard, prior to the time Fifth Army was directed to take charge of operations. This equipment was transferred to the jurisdiction of this Headquarters at such time as Area and Sub-Area offices were opened.

The applicable rental rates were established after considerable review and study of such standards as those published by the Associated Equipment Distributors and the Associated General Contractors and after comparing with those actually being paid for snow removal operations by railroads, state and county agencies. The Associated Equipment Distributors' manual rates as established for operation on a weekly basis were



determined to be the most equitable rate to cover that portion of the rate representing actual rental of equipment, depreciation, major repairs, insurance, interest, taxes and profit. To convert the weekly rate to an hourly rate basis, the weekly rate was divided by 56 which is the number of hours per week normally assumed for such rate computations.

Operation costs were computed independently and added to the rates referred to above in order to establish an over-all rate per hour that would be inclusive of all costs. The operation costs were computed on the basis of 20 hours operating time each day and included costs of fuel, oil, grease, minor repairs, salaries, per diem plus a 10% allowance for overhead charges.

Stand-by rates were also established for application when the contractor was unable to operate due to conditions beyond his control, and were computed to cover only his out-of-pocket expenses for maintaining a crew at the site plus an amount to compensate for depreciation, insurance and taxes.

In addition to payment for operating and stand-by time, it was agreed that, where applicable, Mobilization and Demobilization costs would be allowed. Such costs were not allowed on equipment hired in the immediate locality where work was performed. In general the amount allowed for these costs was established by negotiation between representatives of this Headquarters and the contractor and included only his actual out-of-pocket expenses with no profit item allowed. For further details see Appendix AA.

#### PUBLIC INFORMATION

38. To insure that the general public was kept abreast of the situation and the progress made by Operation "Snowbound", a Public Information Office was set up on the staff at Omaha. Daily press conferences were held by the Commanding General. On several occasions, at his press conferences, the Commanding General expressed his appreciation of the cooperation obtained from the other services, the state, county and local administrations. Photographs taken by the Signal Corps were employed to apprise the public of the means being taken to free the stricken area. (Attached hereto at Appendix KK are several editorials and sample news articles characteristic of the publicity given the operation by the press. In addition, in Appendix CC are various photographs indicating conditions during the operation.)

Many resolutions were received from state legislators, boards of county commissioners and civic bodies, as well as letters from state and federal officials and individuals expressing appreciation and thanks to the Army and the Disaster Force. In addition, a number of editorials and paid advertisements were published throughout the area also expressing gratitude for the assistance rendered. Typical examples of these letters, resolutions and editorials are attached at Appendices KK and LL.

#### MEDICAL

39. Due to the type of operation, there was no serious medical problem. Since there were no evacuations resulting in crowding people into areas, no epidemics developed or threatened. Unlike a flood disaster, there was no pollution or contamination of drinking water. A medical staff section was proposed for Headquarters Operation "Snowbound", but after a survey by a representative of the Medical Department from Fifth Army, it was decided that such a section was unnecessary. The Army medical resources chiefly confined their activities to the normal care of the military personnel involved in the operation, except for one instance, detailed below. These resources were supplemented by civilian doctors where necessary. Serious cases were evacuated. (See Appendix BB.)

During the severe blizzard in the middle of February, a medical detachment of one officer and ten men was sent to Rawlins, Wyoming to assist the local medical facilities in caring for approximately five hundred Operation "Snowbound" personnel stationed in this small town. The local hospital had a capacity of thirty-five beds and was full. As a precautionary measure, the Army medical personnel were sent in. They

also accompanied weasel teams which went out to contact ranches which had been snowed in and isolated for two months. A fortunate break in the weather terminated the requirement for these Army medical personnel and they were returned to their home station on 23 February.

At the Red Cross request there were some instances where a civilian doctor was transported to an isolated farmhouse by helicopter, light liaison type aircraft, or by weasel, but these were isolated cases and in general the illness was not due to the weather.

#### STATUS - 17 MARCH

40. a. Summary of Results. During this operation which lasted just over a month, 243,780 persons were freed from being snowbound, 4,011,184 cattle and farm animals were given access to feed, and 115,138 miles of roads and trails were opened to achieve this objective. In some cases, the same road was reopened several times due to recurring drifting and blizzards. Figures are Field Engineers' estimates compiled from daily periodic reports. (Chart in Appendix MM shows day to day results.)

#### b. Status of Demobilization.

##### (1) Contractor Equipment.

(a) All contractor equipment released as of 15 March.

(b) Since all contracts were made as Engineer contracts by the Purchasing and Contracting Officers of the Omaha, Denver and Garrison Districts of the Missouri River Division, contract terminations are being handled by those offices through normal Engineer channels.

##### (2) Government Equipment.

(a) All Government equipment, except residual reserve, in the states of Nebraska, Wyoming, and South Dakota has been returned to proper station.

(b) All Government equipment in North Dakota has been returned to proper station except for the following:

<u>Equipment</u>	<u>Status</u>
Weasels	- All in hands of railroad for forwarding to permanent station as of 1200 hours 17 March.
Government cars and pick-up trucks	- All en route to home stations except those in hands of Ordnance Field Maintenance Team at Ft. Lincoln, Bismarck for repair. Those under repair are expected to be en route to home stations by 19 March.
Ordnance Field Maintenance Team (Ft. Lincoln, Bismarck)	- Expected to clear the area by 19 March.

(3) Military Personnel. All military personnel have been returned to their proper station or orders have been issued to effect their return.

HISTORY  
FIFTH ARMY  
DISASTER FORCE SNOWBOUND

PART II

OBSERVATIONS and LESSONS

## PART II - OBSERVATIONS AND LESSONS

### INTRODUCTION

41. For reference and convenience, the lessons and observations gathered from this operation are grouped into sections as listed below. Further information of more technical nature will be found under the annex of the appropriate service.

#### SUMMARY

##### CIVILIAN RELATIONS

##### INFORMATION AND INTELLIGENCE (Including terrain and snow conditions)

##### OPERATIONS (Including techniques, teams and air)

##### LOGISTICS (Including equipment, supply and maintenance)

##### COMMUNICATIONS

##### FIELD EXPEDIENTS

#### SUMMARY

42. Cold Weather Suitability of Equipment. Generally speaking, all types of snow removal equipment were satisfactory (See Appendix P).

The Army 2½T 6x6 was by far the most satisfactory wheeled vehicle, either military or civilian. However, clutch wear was noted after continued operation in deep snow. The trucks operated quite satisfactorily in depths up to one foot of fresh snow.

The 1/4T truck proved satisfactory except that it stalled in about 9" of snow.

The only over-snow type of transportation employed was the weasel. Its performance was excellent over snow of any depth. The one expressed objection was the difficulty in loading litters from the back. Opinion was expressed that some provision should be made to load litters from the side.

Arctic clothing was generally satisfactory where used properly although there were no periods of long continuous exposure of personnel without at least occasional protection of vehicle cabs or wind breaks. Therefore, it should be assumed that Operation "Snowbound" was not a conclusive test of such clothing. (See paragraph 53)

43. Unusual Uses to Which Equipment Was Subjected. There was no exceptionally unusual usage to which the equipment was subjected during this operation. Some minor variations will be noted in the subsequent sections of this report.

44. New Techniques Developed. The technique developed of clearing roads in a large area was based of necessity upon the direction of the prevailing wind (See paragraph 75) to prevent redrafting. It was also found that wide cuts with sloping or streamlined banks through a drift were much less likely to redraft than if left with vertical banks or just opened to one lane width.

45. Modification of Equipment for Cold Weather. Recommendations from the field included equipping all vehicles with winterization kits. These kits should include tow cables, detachable grousers or plates, engine warmers, spotlights and compasses. Snow tracks should be provided on the dozers to prevent undue stresses in the track tension bolts. Also the lights on the AC tractor series should be raised. See Engineer Appendix Q.

46. Snow Depths vs Equipment. No depth of snow was too great for any of the dozers employed on this operation; however because of the time

element involved and from the viewpoint of economics the sizes smaller than a D-7 or equivalent were not effective. The smaller dozers, D-4 and HD-7, were convenient at times for those remote areas where the bridges would not pass a heavier machine. They could also be used to clean up around stockyards, haystacks and barns. The 2 $\frac{1}{2}$ T 6x6 truck with a plow attachment could handle new snow up to one foot, the motor grader with a plow up to two feet, and the D-8 with a plow could cut through drifts up to six feet in depth. Rotary equipment could handle greater depths but would start tunnelling if the snow was crusted.

#### 47. Civilian Equipment Found Superior to Army Equipment.

a. The Tournado-Dozer with a plow was reported as the most efficient machine by one area. This machine would clear as much as 70 miles per day through occasional six foot drifts. The other area in which hard crusted snow was prevalent said the Tournado-Dozer was important since it would get stuck easily. The machine was excellent for clearing bituminous highways on which cleated tractors could not be used.

b. The Bros snowplow with the adjustable cutterhead attachment was reported superior to all other types of rotaries since it could cut down high crusted surfaces of drifts to a point where it could be picked up by the rotary.

48. Cross Country Vehicles. The only vehicle employed for travel cross country or over uncleared roads was the Army weasel. The performance of this machine was excellent and invoked praise from all quarters.

49. Elevated Road Sections. Road sections built above the elevation of the adjacent terrain remained free from snow if the accumulative snowfall did not reach that elevation or if there were no obstructions that induced leeward drifts that fell across the road. Ordinarily these elevated roadways had substantial borrow areas as ditches which absorbed initial drifting from the fence lines. Any black top surface would absorb any available sunshine and melt off any small accumulation if it were not too deep. Also the constant wind in this area usually whipped the roadway clean. Again this was contingent upon the cumulative snow depth not reaching the elevation of the roadway.

50. Conditions Causing Greatest Drift Accumulations. The characteristic high winds of this section of the country caused drifting where any obstruction caused an eddy. Specifically, trees along a highway, uncut weeds along the shoulders of a highway, uncut weeds along a fence row adjacent to a highway as well as buildings, signboards, snow fences, etc., caused a drift to start. Once a drift commenced, it became itself an obstacle to the wind and caused turbulence and progressive drifting. It was found that even in flat terrain a minor cut through snow with vertical banks would quickly redrift unless the banks were cut down and streamlined. This subject is dealt with more fully in later paragraphs in this report.

51. Lighting Systems. Generally speaking, the lighting systems on snow removal equipment were satisfactory for working at night, except that the lights on the A-C dozers were mounted so low that snow coming over the blade broke the lights. It is suggested that these lights be raised, also the equipment should definitely have back up lights. It was suggested the dozers be equipped with spotlights with which to spot guiding landmarks.

52. Factors Which Hampered Operations. The factors which most hampered road clearance or reaching marooned individuals were, first, the numerous snowdrifts that had to be by-passed or laboriously breached. Secondly, many miles of roads once opened were reclosed by almost continuous winds. The winds would carry ice fragments which struck the operators' faces with stinging effect further hampering efforts. Also of great importance was the lack of information regarding comparative conditions in remote areas where no telephone communications existed. Some sections were very sparsely settled and it was impossible to find out whether the inhabitants were in distress without actually seeing them. The local guides furnished were invaluable, but if the guide from the

next section was not waiting, the operators were often at a loss as to which course to take. The light liaison plane and helicopter were excellent for reconnaissance work. (See Appendix L for further information on helicopters.)

### 53. Extended Exposure of Personnel.

a. There were no cases of extended exposure of personnel to cold weather without the protection of vehicle cabs or improvised wind screens on dozers. A Transportation Truck Company during a march from Nebraska to North Dakota was en route continuously for 20 hours during which the temperature ranged from 5° above zero to 27° below zero. All personnel wore the overcoat, parka type, pile liner, and cap, field pile liner, wool O.D. trousers, wool underwear and shoe pads with proper socks and insoles. It was reported that all personnel were chilled and extremely uncomfortable but there were no casualties. It was observed that shoe pads were not ideal for truck drivers because of their bulk. During this march, all personnel were on a per diem basis; therefore, no information is available as to food supply. Personnel had no physical activity except at halts. The state of health of the command at the termination of the march was good.

b. The relatively few face shields in the area were impractical because they accumulated frost so rapidly as to become useless. One contractor used a plastic laboratory face shield with considerable success. It would not frost or fog for it was held away from the face in the manner of a welder's shield and allowed circulation of the air.

54. Field Expedients. There were many field expedients and techniques developed in the course of this operation. These techniques and field expedients are detailed in OPERATIONS which follows.

### 55. Common Errors in Judgment.

a. There were no outstanding common errors in judgment which led to casualties. However, there was one isolated case where the operator of a dozer broke through the ice while crossing a frozen stream. The error in judgment here was that soundings had not been made across the stream in the path taken by the dozer. There were no casualties from this experience.

b. The weather was markedly unpredictable. A wind of gale force frequently arose unexpectedly causing a ground blizzard making working conditions intolerable. Usually when this occurred operating personnel headed for cover since the falling temperatures and additional snow could have caused the personnel to lose their way and conceivably become casualties. Good judgment had to be exercised as to when to issue storm warnings.

56. Equipment in Short Supply. The only articles reported as needed were two-way radio sets with which to control operations. Some areas stated that each group of dozers should have a set but it is considered sufficient if each equipment supervisor had a small set with which to report to the Sub-Area Office.

57. New Uses for Equipment. The Tournado-Dozer with a V-plow was the only piece of equipment which proved of unsuspected value for snow removal. There were no vehicles with the exception of the weasel that could travel cross country.

58. Future Operations of This Nature. The local Disaster Committees which sprung up to handle the situation could very well be made into a normal organization for all emergency functions. These committees could be integrated into any higher headquarters for administrative and operational control. This subject is treated further in the section on CIVILIAN RELATIONS (Paragraphs 62-64),

59. Wind Controls. Snow fences in this area were built for the volume of snow expected during a normal year. The snow during this season was so heavy that the capacity of the snow fences was completely inadequate.

60. Air Relief vs Surface Relief. This is a controversial question that was not answered by this operation. Practically all supplies dropped by air were bales of hay. Although it was usually dropped into the herds, some of it was wide of the mark and inaccessible to the cattle. Air relief definitely had the advantage of being faster but had the disadvantage of being comparatively meager. Surface relief had the advantage of opening positive supply routes for movement of large quantities. Many sources stated surface relief was the only real answer.

61. Snow Removal From Rail Lines. Probably the greatest inadequacy of snow removal equipment for railroad tracks was quantity. Like other individuals and concerns throughout the area, the railways were not prepared for such extensive and deep snow. Although their equipment is probably adequate for the average year, they were swamped by the snowfall of the past winter. Like the highways, the railways were plagued with drifting after a line had been opened. There were three reported cases of drifts 25 to 30 feet deep and heavily crusted where railway rotary snowplows were unable to cut through. In one case clamshells were used to reduce the depth; in another, two draglines were used; and in the third case, bulldozers were used ahead of the snowplow. On one branch line it was reported that there was eight inches of ice above the rail in one cut. This ice was overlain by twenty-odd feet of snow interlaced with ice lenses. Bulldozers and blasting were resorted to to assist the rotary equipment to cut through.

#### CIVILIAN RELATIONS

##### 62. Contact With Civilian Authorities.

a. It was found to be absolutely essential in this operation that contact with civilian authorities or representatives be immediately established and maintained at all levels of command. Civilian sources were able to furnish the best information as to conditions within the area and establish the facts on which priorities for operations were based. The most effective civilian contact was found to be that obtained through constant liaison with the Governor of each state involved and through the medium of emergency or disaster committees in each county. County disaster committees, where formed, usually included representatives from officials charged with maintenance of state and county roads, local Red Cross chapters, sheriff's office and/or state police in the area, and the principal industries of the area. These county committees met with local commanders at least once a day to review the situation and set up priorities for the next 24 hours of operation. The operation functioned more smoothly and efficiently where complaints or requests for service were made to the disaster committee rather than to the local Army commander. Inquiries or requests received at higher headquarters were referred to the local commander for consultation with the local disaster committee and reply back to headquarters as to facts and action taken or recommended. Such procedure secured from local people familiar with the local conditions and circumstances an accurate evaluation of actual conditions and established the urgency of the inquiry or request for assistance. It also relieved the local commander from pressure by numerous individuals requesting relief and assistance.

b. Local and higher commanders established and maintained contact with appropriate railway officials. Accurate and timely information regarding the current capabilities of the railways in each Sub-Area was essential to efficient operations.

63. Proper Channels. Time was frequently wasted by civilians not realizing the proper channels and procedure to employ for getting assistance. If and when a national Civil Defense Organization is set up, wide publicity as to its modus operandi will solve this problem. There were many instances where telegrams were sent to members of Congress asking for assistance after field offices had been established. This practice caused unnecessary delay, as the request would have received proper attention by the proper agency within the county or community.

64. Civilian Disaster Organizations. There was no standard plan or organization set up in the states for disaster relief work. On county level, some counties had disaster committees; in others, the County Commissioners acted as the disaster committee. It is believed that a local disaster committee or other organization as described under paragraph 62 above would simplify the Army's problem in an operation of this type. In those counties where such an organization existed, work of the Army was facilitated. Other sections of this report have indicated how these committees work. The Red Cross has found that a committee, rather than an individual, is subject to less criticism and pressure in establishing priorities for relief work. A group of counties could then be organized into a district over which the state organization could represent the next level in the "chain of command". A civilian organization of this type would roughly parallel the organization of the Army and the Red Cross and would allow coordination and liaison at each level.

#### INFORMATION AND INTELLIGENCE

##### 65. Intelligence.

a. The large snowbound area through which surface passage was difficult and in which telephone and telegraph communication was limited, presented a formidable problem in the matter of assembling information as to conditions within the area. This problem was met through procedures generally conforming to those utilized to secure information of the enemy during combat. Information once obtained was assembled, evaluated, recorded and disseminated.

b. Means for obtaining information on conditions within the snowbound area included the following:

- (1) Telephone conversations with key residents of towns and localities affected. Such individuals included local bankers, postmasters, newspaper editors, and highway officials. It was found that the best informed individuals were local pilots who had been engaged for some weeks in flying food, fuel, and medical supplies to isolated families.
- (2) Aerial reconnaissance by light ski-equipped planes, during which frequent landings are made at isolated communities, farms, and ranches for the purpose of contacting local inhabitants. Helicopters were also used for this purpose.
- (3) Contact with local Red Cross chapters.
- (4) Aerial photographic reconnaissance of critical points.
- (5) Ground reconnaissance by weasel, snow shoe, and ski.
- (6) Dropping messages and reply by visual signals in isolated farms where landing was not feasible.
- (7) Although the following means were not required during the operation, it is believed that they contain possibilities that could be employed: The landing by parachute or glider of reconnaissance teams in isolated areas, together with radio equipment. Where conditions justify, ski-equipped gliders could be used to land weasels, heavy radio equipment, supplies, and personnel.

66. Reconnaissance. One Sub-Area reported: "In remote locations a weasel was sent out a day ahead of the snow removal equipment to determine the location and amount of work to be done at each ranch. In many cases the report of the reconnoitering weasel saved many miles of backtracking to uncover hay, as frequently haystacks were located along the route to the ranch. A light aircraft was used to check remote areas in coordination with snow removal equipment to insure that an obscure ranch was not by-passed."



## 67. Snowdrifts.

a. It was observed that snowdrifts occurred anyplace where a projection in the earth surface caused an eddy from the wind. In some cases a very small obstacle would start a drift which would grow to a size all out of proportion to the size of the original obstacle; in other words, the snowdrift itself became an obstacle which in turn caused more drifting. It was also observed that roads which were lined with trees, shrubs, fences, or other structures were also more susceptible to drifting.

b. The greatest single factor causing drifts on roads was the cuts along the highway. Practically without exception all cuts filled almost to the top of the cut. The next greatest cause of drifting on the highway was high weeds, brush or trees along the windward side of the road. One particular grove of trees about 8 to 10 feet high produced a drift on the leeward side about 6 feet deep extending about one hundred feet from the edge of the grove. The grove was about 75 feet wide and produced a drift of the same width. A similar drift was caused by a small clump of brush 15 feet in diameter, about 8 feet high that was growing just off the highway grade. This clump produced a drift the width of the clump of bushes about five feet deep which extended completely across the highway. It was also observed that weeds in fence rows produce drifts which extended completely across the highway. These particular drifts occurred in flat stretches as well as along the top of the cuts, and although they were not as deep as those produced by cuts or by clumps of trees or bushes, nevertheless the drifts thus produced were too deep for vehicles to break through without assistance. Observations of drifts along one highway indicated that any vertical or near vertical bank normal to the prevailing winds will produce a drift which will fill to the top of the bank. It was further noted that rather steep hills in the vicinity of the highway, the slope of which was also normal to the prevailing winds, produced little or no drifts when contours were regular with no abrupt changes in slope; leading to the conclusion that drifting might be appreciably reduced by grading back slopes on cuts to a streamlined contour.

68. Snow Conditions. Snow conditions varied considerably throughout the area. In some cases it was observed that drifts had crusted due to light thaws and wind compaction to the point where D-8 and TD-14 dozers could stay on top without breaking through. One area reported that a TD-14 was on top of a drift when the operator jumped off the machine into the snow. The man's weight broke through the snow up to his hips. However, the tractor remained on top of the snow. This indicates the low ground pressure of this particular machine and the strength of the snow crust. It was also observed that in areas where there had been no thawing, snow which had been once worked was much more difficult to doze than new snow. This condition probably resulted from thawing and recrystallization of the snow particles upon compression.

69. Drifting Snow. Contrary to general belief, a light thaw crusting the snow to a depth of two or three inches will not prevent drifting. The high winds of 35-40 miles per hour, and at times up to 70 miles per hour, will flake off a crust at one point which shatters upon impact with the ground commencing a pulverizing action. The break in the crust also starts an eroding point which spreads until within a few hours, or even minutes, a "ground blizzard" of surface blown snow has developed. This pulverizing effect is progressive and soon the crust is again reduced to fine ice.

70. Granular Snow. A granular type of snow, or sleet, was encountered in Wyoming near Rawlins where even tracked vehicles were unable to move. The particles reacted to pressure like a pile of marbles. Since there was no packing or interlocking of particles, the tracks and wheels simply bogged down. This situation was fortunately not extensive.

71. Artificial Cuts. It was found that in dozing through level snow, the windrows formed on either side of the road in effect formed another cut. Unless care was taken to slope back the walls of these windrows, the sharp vertical banks caused drifting in even the slightest

wind. Experience has shown that in clearing important roads, care must be taken to clear a full twenty feet of road surface, then slope back the windrows thus formed to about a slope of one on three. With a profile of this kind, a crosswind tends to scoop out rather than drift in. On the other hand, when the banks were left vertical, the road drifted closed. This procedure was of a more deliberate nature than many of the emergency type road clearing jobs that were done. Photographs included in Appendix CC show the right way and the wrong way.

72. Obstacles in Snow. One Area Engineer commented upon some of the hazards in operating a dozer in snow-covered ground. He quoted as follows: (Beware of) "Concealed projections in frozen ground or other solid objects in deep snow. Impact of a dozer running into such projections unexpectedly is believed to have been a factor in breaking dozer arms. Ears used for connecting the arms to the yoke are most vulnerable and the possibility of their breaking is even more likely when either the holes or the pins are permitted to wear excessively." He further comments that concealed projections in frozen ground may form drifts and conceal "blow-outs" or other depressions into which a tractor may fall with possible danger to both operator and equipment. The only solution found was reconnaissance on foot and alertness on the part of the operator.

73. Road Profiles. Road profiles appear to have been of considerable importance in determining depth and length of drifts along established roads through relatively flat areas.

a. Where the surface of the road was at an elevation above that of the adjacent fields and subject to wind erosion the surface was usually covered with little or no snow. In areas where the elevation of the road surface was below that of adjacent fields (estimated range of six inches to eighteen inches), the snow tended to fill the surface voids with resulting drifts from one and one-half to three feet deep and of varying lengths up to several hundred yards. In such areas, the fields on either side may have had six inches or less of snow. For this reason, clearance of existing roads was frequently avoided, and instead, the old road was paralleled with a new one through the field. Much time was saved by such action in the initial stages of work, although frequently, as more equipment became available, these by-passed roads were later opened.

b. Deeper cuts invariably drifted closed except in some cases where the direction of the wind was parallel to the axis of the cut. Furthermore, the cross sectional profile of a cut appears to determine the degree of drifting in those cuts on a well-developed road. Where the banks were well sloped back, there was less likelihood of redrifting. Indeed, the degree of redrifting appeared to have some relationship to the vertical angle of the banks of the cut. The steeper the banks, the more serious the drifting. (See also "Drifting Snow" above.)

74. Terrain. Reports from the field in certain sections of western Nebraska indicated terrain conditions similar to those existing during desert operations. Landmarks were non-existent, and some roads indicated on highway maps did not exist. Even where trails did exist, the capacity of the bridges was such that heavy equipment would frequently have to detour to the head of the stream bed rather than try to cross the bridge or negotiate steep banks. Under such circumstances it was easy to get lost, particularly during operations at night. Local inhabitants, frequently mounted on horseback, were particularly useful as guides where the depth of snow was not prohibitive. In these wide open spaces of few buildings and roads, each dozer should be equipped with a compass for the operator's guidance since more than once they ended up going at right angles to their proposed route and in one instance even 180°. A spotlight at night would be valuable to pick out landmarks such as gate posts, bridges, and farm buildings to keep the operator oriented.

## OPERATIONS

### 75. Typical Plan.

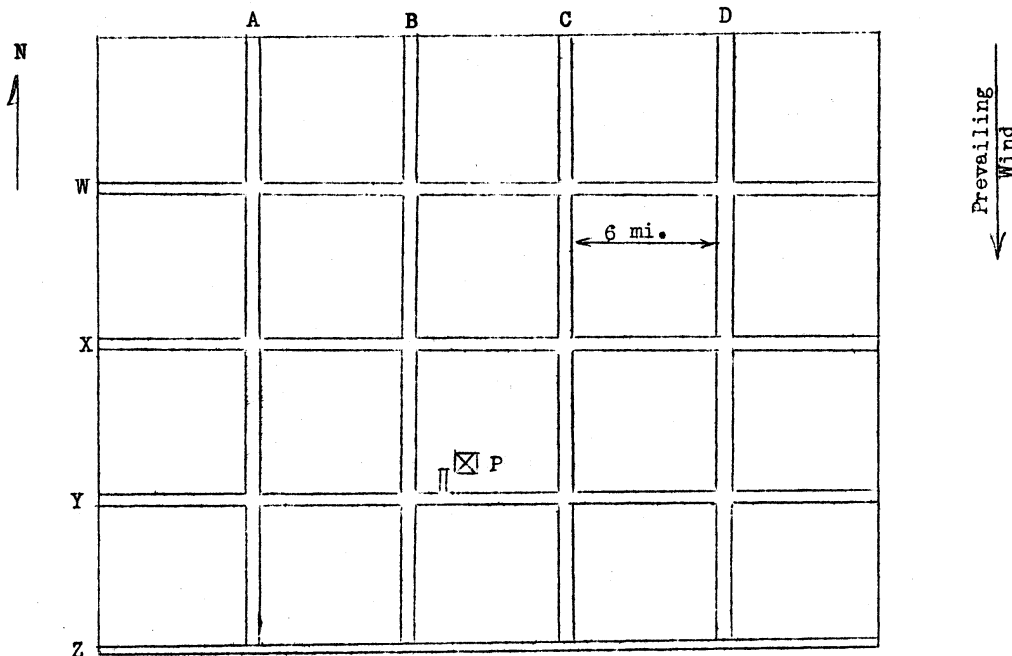


Fig. 1

The general plan for clearing secondary roads in a new county or area was to first clear the roads which run parallel to the direction of the prevailing wind. Experience showed that these roads remained fairly free from drifting once they were cleared (Roads A, B, C & D in Fig. 1). The amount of equipment that can be employed is limited until some roads are opened giving access into the area. Once some of the north-south roads are opened, each intersection allows working space for two additional dozers on each of the laterals, W, X, Y and Z in both directions at each intersection. The north-south roads were then available for service and maintenance vehicles and provided a withdrawal route for personnel and equipment in case of new snow or drifting.

Local inhabitants occasionally complained when a dozer working on a north-south road, as B, bypassed the side road Y without giving the people at P access to a cleared road. These people were placated as much as possible in the interest of expediting the job as a whole and they were assured that other equipment would free them as soon as possible.

76. Route Marking. Flags or route-marking signs were used at cross roads to direct servicing vehicles to snow moving equipment. At night a spotlight mounted on a dozer and pointed up assisted servicing crew to locate working equipment.

77. Civilian Traffic Control. Control of civilian traffic on through highways which were blocked at intervals by drifting was essential. Frequently, tourists would follow snow removal equipment until a drift had been cut through, then dash ahead on the open road only to bog down in the next drift. This only delayed snow removal operations for the tourist vehicle would have to be extricated from the drift before work could continue. Travelers were cautioned by broadcasting stations, newspapers and other means to stay off the highways when danger through drifting was imminent. (See Annex I to "Blizzard Plan", Appendix G.) Cooperation of the state highway patrols was requested to perform traffic control.

78. Dozer-Rotary Team. Repeated clearing of snowdrift cuts, both railway and highway, resulted in very high banks, so high, in fact, that rotary plows were sometimes unable to throw out the snow (approximately 25 feet). Ground equipment was used in some cases to supplement rail equipment for this purpose and dozers were teamed with highway rotaries for roads. Dozers were used to work the banks down to a size where the rotary could operate, cutting down the vertical banks and pushing the snow into the rotary which would then throw it to the leeward side.

79. Dozer-Grader Team. The technique described below was followed generally throughout all areas in the employment of dozers and graders:

Teams of equipment were organized, consisting of one or more bulldozers and a motor grader. The dozers cleared the bulk of the snow from the roadway, leaving a few inches of snow or ice above the surface. The motor grader then followed to smooth out the surface and cut to grade. Since the dozer operators paid no heed to grade, less experienced operators could be employed and the work expedited. The grader finished off the job promptly in the wake of the dozers.

80. Dozer Team. Reports from the field concluded that where the snow was more than two feet deep, it was necessary at all times to use two dozers working together for the following reasons:

a. If the drift was hard, the first dozer could break up the snow and the second followed to clean up.

b. If the snow was light enough to permit, two dozers could work in echelon, the first one set with the blade to the right and the second to the left, making the initial path at one passing.

c. The second dozer assisted the first in case of breakdown or other mishap. Frequently under icy conditions, a dozer slid off the road and got stuck. The second dozer pulled it out. Reports were received that even slopes of 1 percent on ice caused a dozer to slip sideways.

81. Hydraulic Equipment. In one respect hydraulic equipment was to be desired over cable operated dozers: In case the dozer became stuck without another dozer nearby, the operator could place a plank under the blade, press down with it thus raising the front of his cat. He could then block up under the tracks usually effecting the dozer's release.

82. Comparison of Equipment. A report from North Dakota submitted the following tabulation of the capabilities of the various types of equipment used:

<u>Type of Equipment</u>	<u>Snow Depth Limit</u>	<u>Mobility</u>
Four-ton truck with plow	2 feet	High
Seven-ton truck with plow	2-3 feet	High
Dozers, above 85 H.P.	3-6 feet	Low
Rotary Snowplow	6 feet	Medium
Tournadozer, Model C	4 feet	High

83. Dozer Blade Side Plates. In some areas the side plates on dozer blades were removed to facilitate pushing snow. The removal of these side plates aided in keeping the dozer blade clean.

84. Railway Snow Removal. The Army was not engaged in operating any railway snow removal equipment. The equipment of the railways was probably adequate for the snows of the average year. The extent of the blizzard area in 1949 was much greater than has been experienced in the western plains states for many years. Except in very unusual circumstances, railway snow removal equipment had no difficulty in clearing a line, but with the recurring blizzards the lines frequently drifted closed behind the snowplow. Furthermore, many branch lines had also been blocked and the railways did not have sufficient equipment to work on all lines simultaneously. An interesting example was the Albion branch line of the

Northwestern Railway in northeastern Nebraska. This line was closed for almost two months due to extremely heavy drifting in many cuts and alternate thawing and freezing which layered many of the cuts with several feet of ice. In fact, it was reported that there was eight inches of solid ice over the rails in some places. The railway used three types of equipment on this branch line -- bulldozers working ahead of the snowplows, V-type plows and rotaries. From the reported number of breakdowns of V-plows and rotaries on this branch line, it seemed that this type of equipment is not particularly satisfactory for breaking through ice. Blasting was reported to have been tried with limited success. The above-mentioned Albion line was finally opened about 22 February by an extraordinary effort combining the railroad's "Jordan ditcher" with ice cutter attachments and hand labor with picks.

85. Dragline for Snow Removal. A railway rotary snowplow was clearing a drift in western Nebraska when the drift became so deep the plow began tunneling. The estimated depth was about 30 feet. Since the plow was unable to cope with the drift, the railroad employed two 1-1/2-yard draglines and started one from each end. The draglines stood on the bank and cast well away from the cut. The line was reopened by this means. Clamshells mounted on flat cars were used on another railway line for the same purpose. Both methods were too slow and were used only as a last resort.

86. Convoys. Roads and trails once opened refilled within a matter of minutes under conditions of blowing snow. One means of effecting relief for human suffering and isolated livestock under such conditions was the organization and dispatch of self contained convoys. Such convoys were made up of bulldozers, snowplows, fuel trucks, wreckers, tractors, and cargo-carrying vehicles, which were able to fight their way over distances up to fifty miles. Reconnaissance vehicles, such as weasels, operating ahead of the convoy were valuable in avoiding bad snowdrifts and deep cuts and permitted advantage to be taken of all opportunities to travel over bare ridges and off the established road.

87. Water Crossing on Ice. While crossing a river on ice presumed to be ten inches thick, a D-8 tractor broke through the ice and went into the river. The operator, a local man, was familiar with the river in this area and had previously crossed the river at this point. Investigation revealed that the channel had changed under the ice and the operator had sounded over what was then the shallow portion of the ford, believing it to be the deep section. Soundings were not made over what later proved to be the deepest portion of the stream. A blanket of snow over this section of the ice had prevented freezing to the depth determined over the more shallow section, and this thin ice gave away under the weight of the tractor. The moral to this, of course, is to sound all ice in the path of the vehicle before crossing with a heavy load.

88. Ski-Equipped Light Aircraft. The following comments by one Sub-Area were not concurred in by any other Sub-Area. It is believed that the reason for this report is that the area in which the Sub-Area operated contained a large number of bald sandhills. The high wind blew clear the tops of these hills almost invariably and for this reason, there were a number of open places in which a light plane could land. Other areas not having this fortunate circumstance were well pleased with the performance of ski-equipped aircraft which actually were the only ones that could operate.

"Pilots of light aircraft preferred conventional landing gear to skis for the following reasons:

a. Snow conditions are unknown at the point of landing and with skis the distance required for landing is indeterminate.

b. Skis deprive the pilot of all braking power and decrease the pilot's control of the airplane.

c. In open country, such as this, some relatively snow-free wind blown areas are usually available, making a convenient landing possible."

89. Use of Helicopters. Helicopters from Tenth Air Force and from Air Training Command, were dispatched to Wyoming to assist in the critical areas of Rawlins, Douglas, and Casper. Due to the high winds that were prevalent within those areas, it was impossible to use them.

90. Cold Weather Starting.

a. Most contractors preferred that their equipment work a 24-hour day rather than two 10-hour shifts or any other such schedule that provided for even a brief shutdown. This was due to increased wear on parts incurred by starting a cold engine and the usual cold weather difficulty of starting the engine after it had cooled. This latter item was generally reported from all Sub-Areas.

b. It is commonly known that one of the by-products of combustion is water vapor, some of which remains in the cylinders after the equipment is shut down. This vapor is deposited as frost on the cylinder surfaces as they cool. Since the diesel engine relies on heat generated by high compression to heat the oil to the flash point, several cycles are required to melt this frost and drive it from the cylinders and then kindle the fuel. Ordinarily this would soon wear down the batteries on a battery started tractor. Preheating the motor would obviate this difficulty. In the case of a tractor started by a gasoline starting motor, the presence of frost may be such as to prevent proper carburation in that the gasoline might not vaporize to the extent necessary to ignite properly and the first slow burning might cause flooding of the cylinders. This difficulty, too, would be removed by preheating the starter motor.

c. To aid in starting the tractors, some contractors used ether which generally proved satisfactory. Various oil companies manufacture a starting aid which contains a highly volatile hydrocarbon for this specific purpose. Since this did not appear to be generally available, alcohol and even medicinal ether was reported used.

91. Mechanical Limitations.

a. Condensation of moisture within the electrical components of the equipment after shutdown made starting again very difficult. These points include magnetos, distributors and even spark plug wires. The moisture formed a deposit of frost which often effectively grounded the circuits. Field remedies were reported as shellacking ignition wires with common clear fingernail polish, taping all openings in other electrical components, or preheating them to vaporize the moisture. Cleaning the distributor with a little alcohol and drying with a jet of air also worked in certain cases.

b. Moisture also became a problem in the form of condensate in the fuel tanks. Several incidents were reported in which tractors were impossible to start because of frozen plugs in the fuel lines. This was especially true when the tank had been left nearly empty. A blowtorch was used in one instance to free the line. Other contractors found that addition of alcohol to their fuel tanks with the diesel fuel would keep the moisture in suspension.

LOGISTICS

92. Secure Base of Supply. In the snowbound area there was the continued threat of equipment and men being cut off from a secure base of supplies and thus slow up the operation. A sudden high wind or a new snowfall would fill in the drifts which had been cut through. This happened in many instances and a snowplow or a dozer without fuel became a liability. This threat was met in several ways:

a. From the over-all point of view, Operation "Snowbound" prepared for the possibility of another blizzard. See copy of orders attached, Appendix at G.

b. A pool of additional equipment was located outside the area for immediate dispatch should the situation require it. Furthermore, additional railway snow removal equipment was also located outside the area for emergency use if required.

c. Expediting railway deliveries of vitally needed supplies into towns, once the roads or railways were open. A prompt buildup of fuel supplies was imperative.

d. One contractor who was operating a number of dozers solved the problem in his own way. He made up a train consisting of a snowplow, engine, flat cars, diner, sleeping cars, and box cars. He would then have this train sent in near his area of operation and use the train as his base, operating therefrom. His firm base was mobile and his snowplow could get him out if conditions did not become very bad.

93. Sleds. Locally improvised sleds of the bobsled type three or four feet wide by five to eight feet long were made for hauling additional supplies behind weasels on rescue missions. The carrying space in a weasel is limited and the use of sleds doubled or tripled their capacity. It is believed that this expedient should be employed only on fairly smooth and level terrain as the carrying or hauling of excessive loads on rough or mountainous terrain imposes a great load on the lightly constructed tracks of the weasel. It was suggested that maximum loads should be one thousand pounds on the weasel and up to one thousand pounds on the sleds for good operating conditions. These figures, of course, are dependent upon the terrain conditions in the area.

94. Dozer Size. Generally speaking, all areas reported that dozers smaller than the D-7 were impracticable for the snow-removal operation. One area reported, however, that the low capacity of bridges in the rural area made desirable a few lightweight smaller type bulldozers. Since this was a rather unusual circumstance, their application was limited.

95. Tractor Performance. As previously observed the TD-14 performed admirably due principally to its wide treads which enabled it to stay on top of drifts which had become firm where heavier equipment broke through and had to be dug out. The light tractors DD-6, D-6, HD-7 at times had difficulty with heavy wet snow, deep drifts, and heavy crust and ice, but no conditions were encountered which were impossible with the light equipment although such heavy work could be accomplished more rapidly and with less difficulty with the mediums and heavy tractors.

96. The Tournado-Dozer. There were very few of these machines in the operation but local commanders who had them were very enthusiastic in their endorsement. An area in South Dakota where the snow was comparatively light but with frequent heavy drifts up to six feet reported that this machine with a V-plow would travel as much as 70 miles per day through both heavy and light going. Its superior speed and power would carry it halfway through a large drift before it was stopped. It was then backed up to try again. Its limitations were the high point bearing pressure which in this application made it roadbound. Its weight was too great for any but the larger bridges.

97. D-8. Snows ranging up to six feet were very efficiently cleared using a D-8 with a V-type plow, which, with the addition of wings, cleared a path from 15 to a maximum of 30 feet in width. A D-8 may also be efficiently employed with a straight dozer because it can maintain sufficient speed to throw the snow to the side while a smaller tractor can usually not maintain the speed and snow tends to fall in behind the blade.

98. D-7. The D-7 with blade, both angle and straight, has proved to be quite efficient in depths of three feet or less. Motor patrols with V-type plow attachment do a very good job of efficient clearing in depths not to exceed three feet while a patrol with normal blade is excellent for the clean-up of previously cleared areas.

99. HD-7 Dozer.

a. The field reported considerable mechanical difficulty with HD-7 dozers. One area reported as follows: A deadline ratio of about twenty-five percent on a total of twenty-three HD-7 employed. Of these twenty-three, seventeen were Army equipment from the Granite City Engineer Depot, all either new or reconditioned. The remainder of the HD-7s were contractor equipment.

100. V-Plows. Generally speaking, wheeled vehicles with V-type snowplow, when operating in old or crusted snow were not effective. However, this type of equipment is satisfactory in removing new or freshly drifted snow in limited depth. See also paragraph 82.

101. Angle of Dozer Blade. It has been observed that some of the tractors plowing snow on minor roads, trails, or entrances to ranches requiring only a narrow lane have used the angle dozer in a straight position commonly known as a bulldozer position. The reason for not turning the angle dozer into its angle position was because of the difficulty in switching from one side or one position to the other. The operator had to leave the tractor, remove certain bolts, and with sledge hammers and bars drive out certain pins in order to shift the blade. It was then found that the blade was usually frozen in one position, and it took from one-half to two hours to switch the blade from side to side or from left to right. Rather than do this every few hundred yards, as it generally occurred on a county road where the bank is first on the left side of the road, then on the right side of the road, the operator left the angle blade in a bulldozer position. It was suggested that consideration be given to make the changing of position of the angle dozer more readily accessible to the operator without leaving the operator's seat.

102. D-7 Lighting Switch. The lighting generator on some D-7 tractors is a self-energized generator having a switch which must be turned to a starter position and then re-switched to the light position. Many operators are not familiar with this two-way switching position. It is recommended that instructions be printed conveniently on the side of the tractor hood or on the generator which will be readily seen by the operator so that he will know which way to turn the switch. As an alternative, it is suggested that there be some mechanical device built into the generator which would automatically switch the control from its starting position to the light or power output position.

103. Rotary Snowplows. Field reports indicated that the Adams Grader mounting a rotary was superior to the Oshkosh truck mounting a rotary plow to the extent that it could cut through fresh snowdrifts of 16" or more much quicker. However, this piece of equipment failed when it encountered layers of ice intermixed with the snow. It was recommended that all rotaries be equipped with heavier cutting blades, shafts and mounts, and the front frame be made of heavier material.

104. Concave Dozer Blades. It was found that dozers with concave blades can push two to three times as much snow, due to the fact that the snow will run over in a forward motion, thereby keeping the blade scored clean. A straight blade accumulated snow on the surface and prevented the rolling forward motion and soon overflowed the top of the blade.

105. Truck 2½ ton 6 x 6.

a. Clutch failure was reported on several Army 6 x 6 trucks being driven through narrow passes in deep drifts. The extra width of the rear wheels produced enough resistance in plowing wider tracks to develop clutch wear, which was very pronounced.

b. In temperatures down to 27° below zero, it was suggested by a Transportation Truck Company that some means be provided for heating the cabs.

The 2-1/2 ton 6 x 6 truck is a unit to which considerable thought might be given for future operations by providing plow attachments, either V-shaped or wing-type, as they have proved to be fast and efficient up to a depth of one foot of snow.

106. Synthetic Tire Tubes. Operations indicate that synthetic tubes, with which civilian type vehicles were equipped, will not stand up under zero and subzero temperatures coupled with extreme or even moderate travel. It appears that the neoprene tubes manufactured by



Firestone Rubber Company became brittle and lost their flexibility with the cold. When the vehicle was operated the air in the tubes expanded, opening cracks causing leaking and then when the vehicle stopped, the air cooled and the tire became flat. One Ford dealer in North Dakota stated he had replaced 30,000 tubes.

107. Air Transport. Civilians frequently do not realize the limitations of air transportation of supplies. In one case the operation was requested to fly in immediately ten thousand tons of hay to a certain area. Investigation disclosed that railway lines were open and shipments could be made through normal transportation channels. The railways willingly gave priority to this cargo and trucks were available to distribute the hay. The policy was thus established to use airlift in emergency situations only.

108. Air Dropping of Supplies. Air drop was used only for transporting hay to cattle. Because of the tonnages and bulk involved, it was impossible to deliver hay by means of weasels. Therefore, there was no comparison between air drop and surface relief by the Army. During this operation, air transport of individuals such as doctors, or very light supplies such as small quantities of human food and medicines were delivered by landing light liaison type aircraft at isolated homes to a great advantage

109. Arctic Clothing. The comments from the field concerning the G.I. arctic clothing was varied from offering complete comfort to instances of frostbite and extreme discomfort. The principal exception taken was with the shoe pacs. However, it was generally concurred in that the arctic clothing was adequate when properly used.

a. Despite sustained operations in subzero temperatures, one Sub-Area in South Dakota found that operators of weasels did not require a full complement of arctic equipment during the time that they were operating the weasels. However, in case of breakdown the arctic clothing should be in the vehicle. Furthermore, this Sub-Area recommended that snow shoes be added to the items of equipment so that men could walk to shelter in the event of equipment breakdown. This Sub-Area further recommended from their experience that the men should have at least twelve pair of socks and two extra sets of felt soles for the shoe pacs. They found that it was advisable to change socks twice per day and two pair of socks were worn at a time.

b. In another case, military personnel clothed in parkas, shoe pacs, lined packs, shell insert gloves, wool underwear and heavy socks were exposed to a temperature of  $-10^{\circ}$  for one continuous twenty-four hour period. These personnel were operating an Army 6 x 6 truck which was used as a fuel truck and were caught out when drifting snow closed the road. No unusual after effects were observed from being exposed to the cold and without food for this length of time. However, all vehicles were equipped with kerosene lanterns which were lighted to provide heat for the occupants of the cab, and the back curtains were lashed closed to provide shelter for personnel in the rear of the truck.

c. A Transportation Truck Company reported that the longest period of continuous exposure for the whole company was twenty hours during which the temperature ranged from  $5^{\circ}$  above zero to  $27^{\circ}$  below zero. All personnel wore the overcoat, parka type, pile liner and cap, field, pile liner, wool O.D. trousers, wool underwear and shoe pacs with the proper socks and insoles. The company was in convey moving from Nebraska to North Dakota. They reported that all personnel were chilled and extremely uncomfortable but there were no casualties. This company further reported as follows: The foot gear is not practical for truck drivers because they are bulky and tend to make the feet perspire. On dismounting for maintenance, the feet get cold and do not warm up again until the shoe pacs are removed. The company commander further reported that the shoe pacs were worn correctly with ski socks, wool socks and insoles, but for long periods of exposure they are uncomfortable.

d. Another Sub-Area reported a maximum exposure time of twenty hours during blizzard conditions with temperatures from  $-16^{\circ}$  to  $+11^{\circ}$ . The men were clothed in wool O.D. shoe pacs; two pairs of socks, parka jacket, leather gloves with inserts. The mission was relief. These men were operating a weasel with no special protection. Food was supplied by ranchers. The report states legs were cold to a state of numbness but not frozen. There were no ill effects other than fatigue.

e. The 377th Transportation Truck Company reported from North Dakota that the prolonged cold made driving very uncomfortable due to the inadequate foot gear and issue trousers. It was suggested that a loose cotton, field O.D. trouser with pile lining be developed for vehicle drivers for zero and subzero temperatures. There could be several sets of trousers issued for the one liner.

110. Sheep-Lined Boots. Some military personnel were issued sheep-skin-lined flight boots. There was only one case of an individual wearing these boots to have frostbite, and investigation disclosed that the individual was wearing tight-fitting dress shoes inside the flight boots. The frostbite was quite severe and incapacitated the man for the remainder of the mission.

111. Colored Goggles. It was suggested that personnel be required to wear colored snow glasses in future operations of this type. (The QM has this item of equipment and limited issue was made.) The goggles were necessary during days of sunshine to prevent snowblindness, of which a few instances were reported.

#### COMMUNICATIONS

112. Communications. Two-way radio communications were utilized in some cases for the exchange of information and the direction of operations. Reconnaissance vehicles and planes able to report to and receive instructions from appropriate headquarters by radio were found useful. Two-way radio between Sub-Area headquarters and operating groups would have been a convenience but was not found to be essential.

113. Visual Signals. Improvised visual signals laid out on the snow are difficult to detect unless the observer is directly overhead. One solution employed during this operation was to ask the people to burn an old automobile tire to attract attention. The old tires, which burn slowly, make considerable smoke and contrast well with the white snow background. Early in the operation when many families had been cut off from the outside world for months, it was found necessary to adopt some system of air-ground visual signals so farmers without phones could make their needs known. At first the air-ground liaison code was proposed but considered too complicated for the average farmer to understand and also the farmer naturally did not have the standard panels. A simplified code was devised (See Appendix G,) and a copy dropped at each isolated farm and ranch. It was tied to a long red streamer so it could easily be located.

#### FIELD EXPEDIENTS

114. Anti-cutting Device. One contractor with an inexperienced operator on a dozer was having trouble with the dozer blade biting into the sandy soil which contained no moisture and was therefore not frozen solid under the snow. It was observed that areas free from snow started soil erosion from the wind. A hilltop would be blown free of snow and downwind the snow was stained brown from windblown soil from the hilltop. He solved this problem by splitting a 2-inch pipe lengthwise and slipping it over the cutting edge of the blade of the dozer, then holding it in place by tack welding. This field expedient proved satisfactory. The blade would then ride over the uneven ground without digging into the soil, and yet it would stay under the snow. He reported that one piece of pipe so attached would last about one hundred hours before replacement was required. Other reports indicated that a similar attachment allowed faster operation, provided no ice was encountered. This gadget allowed the operator to use third gear.

115. Blasting, Thawing and freezing made very hard drifts, In places, dynamite was resorted to. The results of this blasting may be seen in photographs in Appendix QC.

116. Track Roller Lubrication. The use of heavy engine oil (SAE-50) for lubrication of track rollers was recommended as more satisfactory than grease when temperatures are at zero and below. It was further recommended that this lubrication should be applied more frequently than if grease is used.

117. Gear Case Lubricants. One contractor reported successful use of SAE-90 lubricant diluted with 10% diesel fuel (volumetric) in final drive of D-7 dozer in temperature of -10° F. Lightweight lubricants were not available at the time.

118. Snow Fences. In places where the prevailing winds were across a highway cut, it was found that "snow fences" dozed up out of snow on the windward side of the cut protected against further drifting, until the ice caused by the "fence" was filled up. Then the same procedure would be repeated. These "fences" were built up to a height of three to five feet. The effect was similar to the conventional snow fence commonly employed by the highway departments.

# HISTORY

FIFTH ARMY

DISASTER FORCE SNOWBOUND

PART III

APPENDICES

HISTORY

Fifth Army Disaster Operation

"SHOWBOUND"

HEADQUARTERS FIFTH ARMY  
Office of the Commanding General  
1660 E. Hyde Park Blvd  
Chicago 15, Illinois

29 January 1949

SUBJECT: Fifth Army Disaster Force "Snowbound"

TO: Major General Lewis A. Pick  
Division Engineer, Missouri River Division  
206 South 19th Street  
Omaha 2, Nebraska

1. References:
  - a. AR 500-60.
  - b. Department of the Army TWX, 29 January, inclosed.
  - c. Fifth Army Disaster Plan, 1948.
2. Effective upon receipt hereof you are designated commander, Fifth Army Disaster Force "Snowbound" in accordance with paragraph 2a (1) AR 500-60.
3. Subject to the provisions of references 1 a and b above, and subsequent directives from this Headquarters you will direct all appropriate activities within the Fifth Army Area to provide relief for snowbound families and livestock.
4. Fifth Army Disaster Plan will serve as a guide in the accomplishment of the mission.
5. Your present staff will be supplemented by this headquarters to meet your requirements as communicated by you, and to provide necessary liaison as required by this headquarters. Initial movement of troops and individuals to your command including those individuals already participating in the operation will be made by this headquarters.
6. Executives, State Military Districts, in their present locations, are at your disposal for liaison with State agents of the Federal Works Administration and with State Governors.
7. Necessary equipment, personnel and services not under your direct control will be requested to this headquarters.
8. Necessary journal of daily operations will be maintained upon which to base periodic reports and final history of operations.

Ltr to Maj Gen Lewis A. Pick, Div Engr, Mo. River Div, Omaha 2, Nebr.,  
subj., Fifth Army Disaster Force "Snowbound", dtd 29 Jan 49.

9. Careful and accurate accounting of all funds expended will be  
made and reported to the Army Comptroller in accordance with provisions  
of AR 500-60.

BY COMMAND OF LIEUTENANT GENERAL CHAMBERLIN:

/s/ R. H. Kraven  
/t/ R. H. KRAVEN  
Lt Col., AGD  
Asst Adjutant General

1 Incl  
TWX fr D/A dtd 29 Jan 49

A True Copy:

F. L. Lamb /s/  
F. L. LAMB  
Captain, AGD  
Asst Adjutant General

MESSAGE

PRIORITY

ECA 86

EUA 245

PP EUGG

FM UEP 78J/CSGPO D/A WASHINGTON DC 291900Z

TO UECC/COMGENARMYFIVE CHGO ILL

UWPG/COMGENARMYSIX SFRAN CALIF

INFO UEGHS/COMGENARMYONE

UETG/COMGENARMYTWO

UEAC/COMGENARMYTHREE

UWFC/COMGENARMYFOUR SANANTONIO TEX

WD GRNC

WCL40145 RPT WCL40145

FROM CSGPO THE PRESIDENT HAS DESIGNATED THE SNOWBOUND WESTERN STATES A DISASTER AREA AND HAS AUTHORIZED THE USE OF SUCH RESOURCES OF THE NATIONAL MILITARY ESTABLISHMENT AS ARE APPROPRIATE TO THE RELIEF OF THIS AREA BASED ON REQUESTS OF THE FEDERAL WORKS ADMINISTRATION PD THIS AUTHORIZATION PROVIDES FOR THE EXPENDITURE OF ANY FUNDS NOW AVAILABLE TO THE DEPARTMENTS OF THE NATIONAL MILITARY ESTABLISHMENT INCLUDING EXPENDITURE OF FUNDS AVAILABLE FOR RIVER CMA HARBOR AND FLOOD CONTROL WORK OF THE CORPS OF ENGINEERS PARA ACCORDINGLY YOU WILL TAKE SUCH ACTION AS YOU DEEM APPROPRIATE TO PROVIDE RELIEF FOR SNOWBOUND FAMILIES AND LIVESTOCK IN YOUR ARMY AREA PD SUCH ACTION SHOULD BE BASED ON REQUESTS OF THE FEDERAL WORKS ADMINISTRATION REPRESENTATIVE DESIGNATED FOR EACH STATE OF THE AFFECTED AREA PD FOR THIS PURPOSE ALL DEPARTMENT OF THE ARMY RESOURCES IN YOUR AREA ARE PLACED UNDER YOUR CONTROL PD PERSONNEL CMA SUPPLIES CMA OR EQUIPMENT ADDITIONAL TO THAT AVAILABLE TO YOU MAY BE REQUESTED FROM THE DIRECTOR OF PLANS AND OPERATIONS PARA YOU ARE MOREOVER AUTHORIZED TO EXPEND SUCH FUNDS AS ARE REQUIRED TO ACCOMPLISH THIS TASK WITHOUT REGARD TO FUNDS PRESENTLY AVAILABLE TO YOU PD PROMPTLY NOTIFY BUDGET DIVISION CMA OFFICE ARMY COMPTROLLER OF EXPENDITURES IN EXCESS OF PRESENT FUNDS AVAILABLE TO YOU PD THE EXPENDITURE OF SUCH FUNDS WILL BE IN ACCORDANCE WITH TARE MIKE FOURTEEN DASH SEVEN HUNDRED PD CAREFUL AND ACCURATE ACCOUNTING OF ALL FUNDS EXPENDED WILL BE MADE AND REPORTED PERIODICALLY

TO THE ARMY COMPTROLLER IN ACCORDANCE WITH THE PROVISIONS OF ABLE ROGER FIVE HUNDRED DASH SIXTY PARA USE OF PERSONNEL CMA FUNDS AND RESOURCES OF THE CORPS OF ENGINEERS RIVER CMA HARBOR AND FLOOD CONTROL PROJECTS SHOULD BE CLOSELY COORDINATED WITH APPROPRIATE DIVISION ENGINEERS PARA THE SECRETARY OF DEFENSE HAS DESIGNATED THE SECRETARY OF THE ARMY AS HIS REPRESENTATIVE FOR ALL NATIONAL MILITARY ESTABLISHMENT RELIEF ACTIVITIES IN THE DISASTER AREA AND HAS DIRECTED THE SECRETARIES OF NAVY AND AIR TO EXTEND TO THE SECRETARY OF ARMY FULL SUPPORT AS APPROPRIATE PD THEREFORE CMA YOU ARE AUTHORIZED TO CALL ON APPROPRIATE NAVY AND AIR FORCE COMMANDERS IN YOUR ARMY AREA FOR SUCH ASSISTANCE AS YOU DEEM NECESSARY PD TO INSURE MAXIMUM EFFECT OF THE COMBINED EFFORT OF THE THREE SERVICES CMA THE PRESENT RELIEF ACTIVITIES BY THE NAVY AND AIR FORCE WILL CONTINUE UNINTERRUPTED SUBJECT TO OVERALL COORDINATION BY ARMY COMMANDERS PD NAVY AND AIR FORCE COMMANDERS CONCERNED ARE BEING ADVISED TO THIS EFFECT BY THEIR RESPECTIVE SERVICES PARA FOR FIFTH ARMY CLN GENERAL WHEELER CONCURS IN YOUR CONTEMPLATED ASSIGNMENT OF GENERAL PICK AS YOUR REPRESENTATIVE IN APPROPRIATE AREAS

29/19~~00~~2



HEADQUARTERS FIFTH ARMY  
Chicago 15, Illinois

LO ALFSI 635

28 February 1949

SUBJECT: Designation of Officer

TO: BRIG GEN GEORGE C STEWART 015349 USA  
206 South 19th Street  
Omaha 2, Nebraska

VOCG 27 Feb 49, you are designated as commander of Fifth Army Disaster Force "Snowbound", vice MAJ GEN LEWIS A PICK.

Instructions contained in ltr this hq, 29 Jan 49, Subject: Fifth Army Disaster Force "Snowbound", remain applicable, copy attached.

BY COMMAND OF LIEUTENANT GENERAL CHAMBERLIN:

/s/ T. J. Marnane  
T. J. MARNANE  
Lt Colonel, AGD  
Adjutant General

DISTRIBUTION:

5 O  
1 Finance  
1 AG Pers  
1 AG Records  
1 AG  
1 201 file  
1 Div Engr, Mo River Div  
5 CG 10th Inf Div  
5 G-3 "Operations Snowbound"

HISTORY

Fifth Army Disaster Operation

"SNOWBOUND"

STATION LIST

<u>AREA</u>	<u>LOCATION</u>	<u>OFFICERS IN CHARGE</u>
<u>AREA 1</u>	<u>Ainsworth, Nebraska</u>	<u>Lt Col John W. Paxton, Area Engr</u>
Sub-Area I	Neligh, Nebraska	Maj Francis J. McKay, Sub-Area Engr
Sub-Area II	O'Neill, Nebraska	Maj James H. Harper, Sub-Area Engr
Sub-Area VI	Valentine, Nebraska	Maj George P. Jones, Sub-Area Engr
<u>AREA 2</u>	<u>Alliance, Nebraska</u>	<u>Lt Col Craig Smyser, Area Engr</u>
Sub-Area VIII	Alliance, Nebraska	Capt John P. Agnew, Jr., Sub-Area Engr
Sub-Area VII	Chadron, Nebraska	Lt Col H. L. Green, Sub-Area Engr
Sub-Area X	Cheyenne, Wyoming	Lt Col Milton Wright, Sub-Area Engr
<u>AREA 3</u>	<u>Pierre, So. Dakota</u>	<u>Lt Col H. A. Morris, Area Engr</u>
Sub-Area XI	Pierre, So. Dakota	Capt Mervin Schramm, Sub-Area Engr
Sub-Area XII	Rapid City, So. Dakota	Lt Col J. L. Lewis, Sub-Area Engr
<u>AREA 4</u>	<u>North Platte, Nebraska</u>	<u>Maj Wm. H. H. Mullin, Area Engr</u> <u>Capt John W. Morris, Asst Area Engr</u>
Sub-Area III	Broken Bow, Nebr.	Maj Clifford E. Cross, Sub-Area Engr
Sub-Area IV	Ogallala, Nebr.	Capt Edward C. Bruce, Sub-Area Engr
Sub-Area V	Mullen, Nebr.	Maj M. D. Stoller, Sub-Area Engr
Sub-Area IX	McCook, Nebr.	Maj John E. Schremp, Sub-Area Engr
<u>AREA 5</u>	<u>Bismarck, No. Dakota</u>	<u>Col J. S. Seybold, Area Engr</u>
Sub-Area XIII	Mott, No. Dakota	Lt Col W. N. Beard, Sub-Area Engr
Sub-Area XIV	Minot, No. Dakota	Lt Col T. H. Setliffe, Sub-Area Engr
Sub-Area XV	Dickinson, No. Dakota	Lt Col J. W. Paxton*, Sub-Area Engr
Sub-Area XVI	Rugby, No. Dakota	Maj Robert B. Durlin, Sub-Area Engr
Sub-Area XVII	Devils Lake, No. Dakota	Lt Col W. N. Beard**, Sub-Area Engr

\* (Upon closing of Area 1)

\*\* (Upon closing of Sub-Area XIII)

HISTORYFifth Army Disaster Operation"SNOWBOUND"MOBILIZATION AND DEMOBILIZATION

	<u>Date Mobilization Authorized</u>	<u>Date Demobilization Authorized</u>
<u>AREA 1</u>	29 Jan	26 Feb
<u>Sub-Area I</u>	29 Jan	22-26 Feb
II	29 Jan	15-21 Feb
VI	29 Jan	15 Feb
 <u>AREA 2</u>	 29 Jan	 25 Feb
<u>Sub-Area VII</u>	29 Jan	19 Feb
VIII	29 Jan	15-19 Feb
X	30 Jan	16-25 Feb
 <u>AREA 3</u>	 29 Jan	 26 Feb
<u>Sub-Area XI</u>	29 Jan	15-23 Feb
XII	29 Jan	18-26 Feb
 <u>AREA 4</u>	 31 Jan	 22 Feb
<u>Sub-Area III</u>	29 Jan	15-22 Feb
IV	29 Jan	12 Feb
V	29 Jan	15-16 Feb
IX	31 Jan	11 Feb
 <u>AREA 5</u>	 12 Feb	 15 Mar
<u>Sub-Area XIII</u>	14 Feb	22 Feb - 1 Mar
XIV	14 Feb	4 Mar - 9 Mar
XV	16 Feb	28 Feb - 8 Mar
XVI	23 Feb	7 Mar - 12 Mar
XVII	5 Mar	11 Mar - 15 Mar

HEADQUARTERS  
FIFTH ARMY DISASTER FORCE "SNOWBOUND"  
206 South 19th Street  
Omaha, Nebraska

February 26, 1949

Emergency Relief Committee  
Stuart, Nebraska

Attention: Mr. Art Runneln, Chairman  
Mr. Glen Cobb  
Mr. Dale Henderson  
Mr. Mark Nelson  
Mr. W. R. Cobb  
Mr. Joe Brewster  
Mr. Ray Carlisle  
Mr. A. M. Batenhorst

Gentlemen:

I wish to express my personal appreciation to your committee and to the people of your community for your cooperation and assistance with respect to Operation Snowbound.

It is only through action such as that performed by your committee and your community that the military representatives were able to complete the job in a record period of time to the satisfaction of all concerned. Your willingness to accept responsibility and advise my representatives reflects the same true caliber of effort as that which originally made this country great.

May I again express my appreciation for your efforts and hope that I may be privileged to associate with your community again at some future date.

Sincerely yours,

LEWIS A. PICK  
Major General, CE  
Commander

~~HISTORY~~~~Fifth Army Disaster Operation~~~~SNOWBOUND~~~~Breakdown of major items of equipment employed by Operation "Snowbound"~~

	<u>Dozers</u>	<u>Graders</u>	<u>Plows</u>	<u>Weasels</u>
Military	174	12	--	169
Contractor	<u>1146</u>	<u>109</u>	<u>44</u>	<u>--</u>
Total	1320	121	44	169

## RECAPITULATION:

	Dozers	1320
	Graders	121
	Plows	44
	Weasels	169
Total all types		<u>1654</u>

HISTORY

Fifth Army Disaster Operation

"SNOWBOUND"

DAILY REPORT OF SUBAREA \_\_\_\_\_

for 24 hours ending 2400  
hour \_\_\_\_\_ day \_\_\_\_\_ month \_\_\_\_\_

(to be phoned to Omaha, Jackson 8308, Ext. 7 between 2400 and 0300)

<u>Personnel</u>	<u>On Hand</u>	<u>Received during period</u>
Officer		(name)
E.M.		(no.)
Civil Service		(no.)
Contractor		(no.)
Other		(no.)

<u>Equipment by General Types</u>	<u>Received During Period</u>	<u>On Hand</u>	<u>Deadlined</u>	<u>Additional Needed</u>
Dozers				
Tractor w/o dozers				
Truck plows				
Truck				
Weasels assigned				
Weasels (N.G.)				
Others				

General Situation (Briefed).

Operations.

Location of equipment and general mission assigned.

Specific location of roads cleared giving length of road opened to use during past 24 hours.

Railroad Situation

Lines still blocked:

From	to
From	to
From	to
From	to
From	to

Proposed locations for work during next 24 hours:

Numbers Liberated	People	Cattle	Other Animals
-------------------	--------	--------	---------------

Any deaths, births, sickness or other hardship cases in snow bound area.

Human interest stories, if any. (Should contain names, places, times and sufficient detail to permit use in news release). Must be accurate.

Relief Supplies Moved by Army for Red Cross or Others	Feed (tons)	Food	Fuel	Other
---	-------------	------	------	-------

Liquid fuel situation for operation of army equipment.

	<u>Approx. stock (gallons)</u> <u>in Area</u>	<u>Additional Quantity</u> <u>needed (if any)</u>
Diesel		
Gasoline		
Lubricants		
Other		

Difficulties encountered particularly those where assistance is needed from this Headquarter.

Weather conditions in area and depth of snow on ground.



For 24 Hours Ending 1800            day            month

(1) <u>Personnel on Hand</u>	(2) <u>Equipment on Hand (excluding deadlined)</u>	(3) <u>Equipment Deadlined</u>	(4) <u>Additional Equip. Needed</u>
Army:	Dozer	a	a
Officers		a	a
E.M.	Truck Plow	b	b
	Rotary Plow	c	c
Air Force		c	c
	Trucks	d	d
Navy		d	d
	Weasels	e	e
National Guard		e	e
	Patrols	f	f
Civil Service		f	f
	Lowboys	g	g
Contractor		g	g
	Sedan & Pickups	h	h
Other		h	h

(5) Group Location	(6) No. of pieces snow removal Equipment Worked	Miles of Road (7) Opened	(8) Closed by Snowfall or Drifting Snow
a	a	a	a
b	b	b	b
c	c	c	c
d	d	d	d
e	e	e	e
f	f	f	f
g	g	g	g
h	h	h	h
i	i	i	i
j	j	j	j
k	k	k	k
l	l	l	l
m	m	m	m
n	n	n	n
o	o	o	o
p	p	p	p

(9) Numbers liberated in Sub Area

People a \_\_\_\_\_

Cattle b \_\_\_\_\_

Other animals c \_\_\_\_\_

(10) Relief Supplies moved by Army, Owned or Rent Equipment in Tons:

Feed a \_\_\_\_\_

Food b \_\_\_\_\_

Fuel c \_\_\_\_\_

Other d \_\_\_\_\_

(11) Average Depth of Snow on Ground in Sub Area: \_\_\_\_\_

(12) Liquid Fuel Situation:

Satisfactory \_\_\_\_\_

Unsatisfactory \_\_\_\_\_

(13) General Situation and Local Problems (brief)

(14) Any problems or difficulties that this Headquarters can solve or help solve:

(15) Weather Conditions in Sub Area during 24 Hours Period (includes brief details of winds causing drifting, or precipitation.)

(16) Human Interest Stories:

HISTORYFifth Army Disaster Operation"SNOWBOUND"

## FIFTH ARMY DISASTER FORCE SNOWBOUND

## BLIZZARD PLAN

3 February 1949

## 1. Effective Date:

This plan becomes effective locally when new blizzard conditions are imminent in any part of the Disaster Area,

## 2. Purpose:

- a. To prevent loss of life and human suffering.
- b. To insure maximum speed in reopening routes of communications.
- c. To insure that D.F.S. (Disaster Force Snowbound) equipment and personnel are so located as to resume operations immediately upon cessation of storm.

## 3. Coordination:

Action under this plan will be coordinated with State Highway Departments, Railroads, Telephone Company, press, radio, Red Cross and local Disaster Committees.

## 4. Operations:

a. Hq. D.F.S. will:

- (1) Secure six hour weather forecasts and advise Area Commanders of impending blizzard conditions.
- (2) Arrange press and radio releases with particular warning to motorists and ranchers. (See Annex 1)
- (3) Publicize Air-Ground distress signals. (See Annex 2)

b. Area Engineers will:

- (1) Contact nearest State Highway District Engineer and, upon his request, arrange for D.F.S. personnel and equipment to assist in opening primary road net.
- (2) Alert Sub-Area Engineers.
- (3) Establish contact at Area level with agencies listed in paragraph 3.
- (4) Coordinate small plane reconnaissance immediately after storm subsides to:
  - (a) Check highways for stalled cars. Arrange small plane pickup.
  - (b) Check railroads for stalled trains. Arrange rescue of personnel.
  - (c) Check rural areas for distress signals. Arrange rescue or Red Cross aid.
  - (d) Report conditions to D.F.S. Hq. by fastest means. (See Signal Annex 3).

c. Sub-Area Engineers will:

- (1) Contact State Highway Department Resident Engineers same as for areas.

FIFTH ARMY DISASTER FORCE SNOWBOUND

BLIZZARD PLAN

- (2) Establish contact at Sub-Area level with agencies listed in paragraph 3.
  - (3) Arrange small plane reconnaissances. Report results and action taken to Area and D.F.S. Hqrs. by fastest means.
  - (4) Check liquid fuel supplies and arrange emergency moves to prevent shortages in critical areas.
  - (5) Move equipment to centers of population or main highways. (See Maintenance Annex 4)
  - (6) Organize weasel rescue teams.
5. Red Cross to continue present activities.

BY COMMAND OF THE DEPUTY ARMY COMMANDER:

LOUIS W. PRENTISS  
Col, CE, Chief of Staff  
Disaster Force "Snowbound"

Annexes -

- 1. Warning to Motor Vehicle  
Travelers
- 2. Air Ground Distress Code
- 3. Signal Communications
- 4. Maintenance

FIFTH ARMY DISASTER FORCE SNOWBOUND

WARNING TO MOTOR VEHICLE TRAVELERS

ANNEX #1

When roads are hazardous and/or a snow storm is expected:

1. Do not travel on the highway unless you absolutely have to do so.
2. If you must travel take the following precautions:
  - a. Notify next of kin or some responsible person of the place and time of your departure, your destination and expected time of arrival and the route you are taking.
  - b. Make certain your vehicle is in good operating condition for winter driving before departing.
  - c. Be sure you have your gas tank filled completely before departure. Never let it get below half full.
  - d. Carry a shovel, chains and a bucket of sand in your vehicle.
  - e. Be sure each person in your vehicle is dressed warmly, has a blanket and overshoes.
3. In the event you are stalled on a highway in the country observe the following rules:
  - a. Unless you are a native of that vicinity, do not leave your vehicle in search of a farm house.
  - b. Run your vehicle motor intermittently so that the heater will prevent you from being frost-bitten, but be wary of excess gas fumes from your vehicle's exhaust.
  - c. Don't go to sleep! If necessary, get out of your vehicle and get some physical activity.
4. Plane reconnaissances will check main highways for stranded travelers after any serious snow storm as soon as daylight and weather conditions will permit.

REMEMBER:

DON'T DRIVE NEEDLESSLY WHEN CONDITIONS ARE HAZARDOUS

FIFTH ARMY DISASTER FORCE SNOWBOUND

NEW AIR-GROUND DISTRESS CODE

Revised - ANNEX #2

4 Feb 49

1. Lay out these symbols by using wood, stone, blankets or other available articles which can be seen from the air. Secure best color contrast to snow and separate symbols when more than one is used.

As a symbol use one large article or one pile of smaller articles.

a. Need Doctor



b. Need Medical Supplies



c. Need Food



d. Need Fuel



FIFTH ARMY DISASTER FORCE SNOWBOUND

SIGNAL COMMUNICATIONS

ANNEX #3

1. The following communications facilities can be made available to the Disaster Force Commander:
  - a. Commercial telephone and telegraph lines
  - b. Operation Snowbound emergency radio net located in the Nebraska-South Dakota area. (Missouri River Division Engineer radio net included in the emergency radio net)
  - c. Commercial radio broadcasting stations
  - d. State and local police radio nets
  - e. Guard radio equipment at Government installations
  - f. Amateur (ham) radio stations
  - g. U.S. Air Force Base Communication Centers
  - h. Naval Reserve radio stations
  - i. Army Signal facilities at the following locations:
    - (1) Fitzsimons General Hospital Communication Center, Denver, Colorado
    - (2) St. Louis Communication Center
    - (3) Kansas City Communication Center
    - (4) Chicago Communication Center
    - (5) Camp Carson, Colorado
    - (6) Fort Riley, Kansas
    - (7) Fort Leavenworth, Kansas
    - (8) Fort Sheridan, Illinois

FIFTH ARMY DISASTER FORCE SNOWBOUND

MAINTENANCE

ANNEX #4

1. Upon receipt of information re approaching high winds, storm or other general blizzard conditions, equipment will be secured as follows:
  - a. Move equipment to places where items will not be cut off from maintenance supplies.
  - b. Store all tools, parts, etc. where they will not be covered or lost.
  - c. If operation is closed down, watch for ice in gear cases, oil pumps, etc. Inspect thoroughly before starting again.
  - d. Equipment must be left in such a manner that it will not be "frozen in".
  - e. Repair crews will have ready dozer cables, headlights, globes, starting ether, carbide for fires and all emergency items as flashlights, electric lanterns, and provisions for immediate or emergency missions.
2. Resupply of spare parts will be assembled at Omaha and dispatched to the affected area by the most appropriate transportation.



HISTORY

Fifth Army Disaster Operation

"SNOWBOUND"

INITIAL INSTRUCTIONS

OPERATIONS

1. Immediately upon establishment of Sub-Area offices, Sub-Area Engineers will:

a. Take over all emergency leased equipment in the area already in operation and report this equipment to the Area Office and to the Division Office.

b. Contact State Highway, County and local officials and establish priorities.

c. Contact the telephone company and arrange for priorities on calls emanating from each Sub-Area Office.

d. Report to Division Office location of rail-heads in the Sub-Area and any changes in these rail-heads.

e. Each Sub-Area Engineer will report by radio or telephone once each day on the following:

(1) Condition of roads and railroads in his area.

(2) General conditions prevailing within his area.

(3) Progress of work completed, number of people liberated, number and species of livestock liberated.

(4) Contemplated schedule of operations for the next 24 hours.

2. General Instructions:

a. Like kinds of equipment should be grouped to facilitate maintenance.

b. All supplies and materials not available locally should be requisitioned by telephone from the Division Office, Jackson 8308.

3. Equipment operating instructions:

a. Tractors should be equipped with light oil and grease.

b. Tractors should be equipped with winter covers for operator protection.

c. Running gear, sprockets, tracks, etc. on tractors should be wet with old crankcase oil to prevent snow and ice from sticking--IMPORTANT.

d. Cable dozers should have sharp cutting edges and should carry spare cable.

e. Each dozer should carry two railroad ties, a blowtorch, extra antifreeze and hoses, shovels, flashlights, and wire cutters for opening fences.

EQUIPMENT RENTAL

1. Equipment Rental Agreement (sample herewith) must be executed for each piece of equipment furnished by contractors or equipment owners, for which rental is to be paid by the Corps of Engineers. Auxiliary equipment furnished to service a major piece of equipment, when such service is the responsibility of the contractor will not be reported on Equipment Rental Agreements and no payment will be made for such auxiliary equipment except as a part of the rate being paid for the major unit. A typical example: If contractor elects to furnish a grease truck to service his tractors instead of hand greasing operation--the grease truck will not be covered by contract and no specific payment will be made for the grease truck. On the other hand, if the Government elects to rent a grease truck to service Government owned tractors, it would then be necessary to execute an Equipment Rental Agreement in the usual manner.

2. The Rental Agreement form will be executed in triplicate, the original being forwarded to the Division Office for use in the preparation of a formal contract. One copy of the Equipment Rental Agreement will be furnished the lessor and one copy retained for your files.

3. These agreements will be entered into prior to the use of the equipment in order that there will be no misunderstanding regarding its use.

4. If it becomes necessary to rent equipment for which a rental rate is not listed, this office will be advised immediately in order that a rate may be furnished.

Note: The attached sample is to be used only when Mobilization and Demobilization are not involved. When Mobilization and Demobilization are involved, a separate paragraph as follows should be added:

Actual cost plus 10% based on certified invoices will be paid for Mobilization and Demobilization.

EQUIPMENT RENTAL AGREEMENT

Division Engineer  
Corps of Engineers  
P. O. Box 1216  
Omaha 1, Nebraska

\_\_\_\_\_  
1949

Dear Sir:

I (we) hereby agree to rent the following described equipment with operating personnel to the United States of America acting by and through the Corps of Engineers for use in emergency snow removing operations at the rates shown below.

<u>Quantity</u>	<u>Item: Complete Description, Capacity, and Identifying Nos.</u>	<u>Total Purchase Cost or Fair Value</u>	<u>Operating Rate Per Hour</u>	<u>Stand-by Rate Per Hour</u>
-----------------	---	--	--------------------------------	-------------------------------

The operating rental rate will include all costs incidental to the operation of the equipment, including but not limited to wages, insurance, and other overhead costs, fuel, grease, repairs and servicing charges. The operating rental rate will commence when the equipment is put into actual operation and to cease when actual operations are terminated.

If due to severe weather conditions or similar circumstances (not including breakdowns), the equipment cannot be operated at least eight (8) hours in any twenty-four (24) hour period, stand-by rental rates will be paid for that number of hours obtained by subtracting the number of hours actually operated from eight (8) hours.

Movement between sites of operation will be paid for at the operating rental rates, except that the total hours paid for will not exceed eight (8) hours in any twenty four (24) hour period.

Time lost due to minor repairs requiring less than one (1) hour will be paid for as operating time. Time lost due to repairs requiring more than one (1) hour will not be paid for.

It is further understood that formal agreement for the rental of the above described equipment will be entered into as soon as same can be prepared and that I hereby assume full responsibility for the safety of all employees, equipment, and materials, and for any damage or injury done by or to them from any source or cause except accidental damage to plant or equipment which may be caused by the Government.

BY \_\_\_\_\_  
(Lessor)

\_\_\_\_\_  
(Title)

\_\_\_\_\_  
(Address)

If Lessor is a corporation indicate State of Incorporation under signature; and if a partner, give full name of all partners.

FOREMAN'S PERSONNEL HANDBOOK  
(EMERGENCY SNOW REMOVAL OPERATIONS)

1. All men hired by the Corps of Engineers for emergency snow removal operations will be given temporary emergency appointments (not to exceed one month) and will be paid prevailing local rates as listed below, for the positions to which assigned.

Positions and Pay Rates

Tractor Operator	\$1.75 per hr.
Bulldozer Operator	1.75 " "
Truck Driver	
$1\frac{1}{2}$ Tons or less	1.00 " "
$1\frac{1}{2}$ to 5 tons	1.15 " "
Over 5 tons	1.20 " "
Trailer Type (Low Boy)	1.35 " "
Mechanic	1.75 " "
Welder	1.75 " "
Laborer	1.00 " "
Oiler & Greaser	1.32 $\frac{1}{2}$ " "
Mechanic Helper	1.32 $\frac{1}{2}$ " "

2. In order to assure payment of men hired by the Corps of Engineers for this work, you must remember and see to it that two important things are done. First, every man hired must fill out and sign Form W-4 (Employees Withholding Exemption Certificate) and Standard Form 61. Second, an accurate record of time worked by every employee must be kept and the time reported to the Omaha Division Office. Detailed instructions follow.

a. Appointment Forms.

(1) Form W-4 (Employees Withholding Exemption Certificate).

The employee must complete all items except Social Security Number and must date and sign the form.

(2) Standard Form 61. This form is made up of two parts.

The front side is entitled "Appointment Affidavits" and must be completed and signed by the employee in the presence of a Notary Public or in the presence of an employee of the Corps of Engineers. In the latter case, the Corps of Engineers employee witnessing the signature will complete and sign the oath of office at the bottom of the form immediately below the appointee's signature. The reverse side of Standard Form 61 is entitled "Declaration of Appointee" and must be fully completed by the person hired.

Payment for work performed by new employees cannot be made unless and until Form W-4 and SF 61, properly completed, are received in the District Office. They should be filled out before the employee starts to work and mailed immediately to the Division Engineer, Corps of Engineers, Post Office Box 1216, Omaha 1, Nebraska. Before forwarding the form write at the top of SF 61 the date employee entered on duty, position to which appointed, and rate of pay. For example, EOD 28 Jan 1949, Bulldozer Operator, \$1.75 hr.

b. Timekeeping.

Time will be reported on separate Eng Forms 1300a, Time and Attendance Report, covering the following types of personnel.

- (1) Employees hired for emergency snow removal.
- (2) Regular employees detailed to snow removal by the Omaha Division Office.
- (3) Regular employees detailed to snow removal by Districts,

ENG Forms 1300a covering employees hired for emergency snow removal ((1) above) will be submitted weekly to the Omaha Division Office for payment. ENG Forms 1300a covering employees listed in (2) and (3) above will be prepared bi-weekly and submitted to the Omaha Division Office for transmittal to their respective employing units.

How to Complete ENG Form 1300a

Only the following heading blocks will be completed.

- (1) Reporting Unit - Show sub-office to which you are assigned.
- (2) Period Ending - Show inclusive dates of calendar week or weeks covered.

List each employee's full name alphabetically and show in the same box his designation and rate of pay. For example - John B. Doe, Bulldozer Operator, \$1.75 per hour.

Show the actual time worked each day for the period reported and show the total time worked in the column "Pay Period Total".

Should an employee's designation and rate of pay be changed during a week, use two blocks to show both designations and rates of pay and report the time worked for each job.

Each ENG Form 1300a will be certified correct in the lower right-hand corner by the reporting Foreman and submitted to the Division Office for payment.

Weekly Time Books will be used to record time worked by all employees. ENG Form 1300a will be prepared from information contained in Weekly Time Books.

3. DO NOT HIRE ANYONE WHO IS NOT A CITIZEN OF THE UNITED STATES. A NON-CITIZEN CANNOT BE PAID FROM GOVERNMENT FUNDS.

4. Straight time will be paid for work not in excess of 40 hours per week. Work performed in excess of 40 hours per week will be paid for at overtime rates ( $1\frac{1}{2}$  times the basic hourly rate).

5. The official station of all employees hired in the field will be designated as follows:

- a. Employees hired at their place of residence will have that point designated as their official station.
- b. The area office at Ainsworth, Nebraska will be designated as the official station for all employees who are not hired at their places of residence.

In accordance with Standardized Government Travel Regulations, all new employees will receive a per diem allowance of \$6.00 whenever they are required to travel away from their official stations and incur additional living expenses. Any Sub-Area Engineer who directs a new employee to work at a location away from his official station will furnish to the Omaha Division Office the following information:

- (1) The employee's full name.
- (2) Position title.
- (3) Official station.
- (4) Date on which travel will commence.
- (5) Points to be visited as nearly as can be determined.
- (6) Duration of travel.
- (7) Mode of travel.

INSTRUCTIONS FOR FIELD PURCHASING

During this present emergency, it is our aim to hold all form of paper work to an absolute minimum. Therefore, if all Government personnel will follow the following purchase procedure then things will sail smoothly:

a. Use the Field Purchase Receipt form for all purchases which you make, EXCEPT purchases of gasoline and oil from filling stations and garages which you can make on credit cards. Bulk deliveries will be purchased by Field Purchase Receipts.

b. The Field Purchase Receipt is in pad form and assembled in such a manner that you have one white copy, one pink copy, and two green copies. For each purchase, make out these four copies, making certain that you have the correct name and address from whom the merchandise is being purchased, the exact quantity and name of the article, the correct price and your signature. Give a white copy to the merchant, keep the pink copy for your own records, and mail the two green copies to the Omaha Division Office. It is as simple as that, if the above instructions are followed.

During this emergency you will not be required to follow the various mandatory purchasing procedures with which many of you are familiar. Competition should be obtained if time permits but will not be required where conditions make it impracticable. However, your good business judgment should be used in making purchases, and exorbitant prices should never be paid.

COST PROCEDURE

1. Sub-Area offices will, at the end of each calendar month, report to the Omaha Division Office on Forms 25 (Costs) the distribution of time for all Government-owned equipment used within the Sub-Area. The actual number of hours worked each day as well as the number of hours off duty due to repairs each day will be reported for each item of equipment.

2. At the end of each calendar week the following documents will be forwarded to the Omaha Division Office by each Sub-Area Office.

a. Delivery tickets (they will be furnished by the service station) covering all service station deliveries.

b. Receiving and Delivery Report, Eng Form 403, covering the services of each piece of rented equipment for which the Corps of Engineers must make payment. (Eng Form 403 should be prepared in duplicate and should show the Contractor's full name and address, description of the equipment, number of hours actually worked and number of hours in a stand-by status and the hourly rate for each. Each Eng Form 403 will be signed by the Sub-Area Engineer. Remember this is the document which will be used to support payment to each contractor for the equipment he has rented to the Corps of Engineers and it must, therefore, be accurate. If possible, all working time and stand-by time should be verified with the contractor or his "on the job" representative, before submission of Eng Form 403.)

S A F E T Y

Motor Vehicles - Operation in winter is hazardous and precaution must be observed. Check car and equipment. Have deficiencies corrected and insure that car is equipped with heater, defroster, snow shovel, windshield wiper, windshield scraper, skid chains, fire extinguisher, spare tire, flashlight, etc. When weather conditions are unfavorable, do not permit the fuel supply to become low. If vehicle becomes stalled in snow drifts, let help come to you rather than seeking help on foot when blizzard conditions exist. Guard against carbon monoxide hazard with adequate ventilation. Wear or carry adequate protective clothing including winter hats, gloves, coats and overshoes.

Heavy Equipment - Injuries resulting from use of this type of equipment are usually serious. Most frequent cause of injury is backing and turning machines without looking, warning, or signalling. Get on and off equipment safely. Consider proper position when starting motors to avoid kick-backs. Refueling any type of equipment with liquid fuel while the motor is running is an unsafe practice. During loading and unloading of equipment on low-boys or railroad cars, extreme precautions must be exercised to avoid accidents which may result in delays as well as personal injury. Proper blocking is essential during transportation of equipment.

First Aid - A 16-unit kit should be available for each unit. Minor injuries should be reported promptly to the supervisor. In cases where medical attention is needed, consult your nearest physician. In case of serious injury, notify the Division office immediately. In case of frost bite or frozen parts due to prolonged exposure to cold, consult a physician immediately. Do not rub frozen part with snow since rubbing bruises frozen tissues. Do not expose frozen part to a hot stove or fire. Cover frozen part and later thaw it out in cool air or cold water.



Public Relations

It is essential that good working relations be established with the press, radio and citizens.

The fullest extent of cooperation with local and state authorities is desired.

Information concerning operation of a specific unit should be restricted to the following factual data:

1. Kind and quantity of equipment
2. Number and names of personnel
3. Description of work completed
4. Description of work being done

Information is not to be given concerning other operational units or prospective activities.

On inquiries concerning overall plan and policy, refer inquiry to the Division Office.

Refrain from expressing any opinions relative to possible success or failure of program, estimated cost or participation of other agencies, whether state, federal or local.

If in doubt, contact Division Office before releasing data.

## EQUIPMENT RENTAL RATES - SNOW REMOVAL OPERATIONS

Description	(Column 1) Hourly Rate (Incl. Profit)	(Column 2) Oil, Fuel Grease Field Repair	(Column 3) Total Hourly Rate	(Column 3) Stand-By Hourly Rate	Remarks
D-6 Tractor (53 HP to 62 HP)	\$ 1.96	\$ 9.10	\$ 8.35	*	
D-7 Tractor (63 HP to 72 HP)	2.43	10.00	8.55	*	
D-7 Tractor (73 HP to 89 HP)	2.43	10.70	8.80	*	
D-8 Tractor (90 HP to 135 HP)	3.09	12.25	9.35	*	
D-6 Bulldozer (53 HP to 62 HP)	2.37	10.75	8.90	*	
D-7 Bulldozer (63 HP to 72 HP)	2.79	11.70	9.00	*	
D-7 Bulldozer (73 HP to 89 HP)	2.79	12.35	9.25	*	
D-8 Bulldozer (90 HP to 135 HP)	3.47	14.05	9.85	*	
Low Boy - 25 Ton w/tractor (semi)	2.88	10.65	8.00	*	
Truck, Pickup (1/2 ton to 3/4 ton)	0.88	3.25	3.15	**	
Truck, 2 ton	1.35	4.50	3.70	**	
Truck, 2-1/2 ton	1.56	6.00	4.30	**	
Truck, 3 c.y. Dump	1.40	4.55	3.70	**	
Truck, 6 c.y. Dump	1.76	5.75	4.20	**	
Grader, Towed, Manually Operated, 9 ft. to 11 ft. Blade	0.72	3.55	3.45	***	
Grader, Towed, Manually Operated, 11 ft. to 13 ft. Blade	0.72	3.75	3.60	***	
Welding Machine D.C. Gas Engine Driven, 250 Amp - 3 50 Amp	0.75	5.45	7.15	****	
Grader, Diesel, Self Propelled, Medium Weight 16,501# to 18,500#	2.41	9.50	8.50	*	
Grader, Diesel, Self Propelled, Extra Heavy 18,501# to 21,500#	2.74	10.20	8.85	*	

Note: The above rates are based on the operation of the equipment for two 10-hour shifts per day. Lessors are required to provide for this operation.

\* 1 operator and 1 helper to be provided per 10-hour shift.

\*\* Driver only to be provided per 10-hour shift.

\*\*\* Operator only to be provided per 10-hour shift.

\*\*\*\* 1 welder and 1 helper to be provided per 10-hour shift.

In the event plant cannot be rented on a fully operated basis, (Column 2), rental based on Government furnishing oil, fuel, grease, and field repairs (Column 2 minus Column 1) can be considered. Stand-By rates (Column 3) of a maximum of 8 hours in 24 will be allowed in cases where equipment cannot work due to severe weather.

CLASSIFICATION OF EQUIPMENT

<u>EQUIPMENT DESCRIPTION</u>				
<u>53 to 62</u>	<u>63 to 72</u>	<u>73 to 89</u>	<u>90 to 135</u>	<u>Manufacturer</u>
<u>Draw Bar H.P.</u>	<u>Draw Bar H.P.</u>	<u>Draw Bar H.P.</u>	<u>Draw Bar H.P.</u>	
D-6	D-7 (9G Series)	D-7 (New)	D-8	Caterpillar
Diesel 50	RD-7	Diesel 70		Caterpillar
	Diesel 65	Diesel 75		Caterpillar
K-0	S-0	L-0	HD-14	Allis-Chalmers
HD-7		HD-10		Allis Chalmers
TD-14		TD-18		International
35-D			80-D	Cleveland Tractor Co.
40-D			FD-4 Speeds	Cleveland Tractor Co.
DD-4 Speed			FD-6 Speeds	Cleveland Tractor Co.
DD-6 Speed			FDLC	Cleveland Tractor Co.

In order to compute rental rates on equipment not included in this Manual, the following information is desired when requesting additional rates:

1. Cost and description of equipment new.
2. Cost and description of all attachments.
3. Model number, rating, type of fuel and any other pertinent information available.
4. Recommended rental rates.

Amendment No. 1 to "Foreman's Personnel Handbook".

Typists, Stenographers and Clerks will be hired on emergency temporary appointments (not to exceed one month) and will be paid the rates listed below:

Typist	CAF-2	\$2284.00	p. a.
Typist	CAF-3	2498.28	p. a.
Steno	CAF-3	2498.28	p. a.
Clerk	CAF-3	2498.28	p. a.
Steno	CAF-4	2724.00	p. a.
Clerk	CAF-4	2724.00	p. a.

Appointments in the above grades necessitate the execution of Standard Form 57 in addition to the forms listed in paragraph 2, "Foreman's Personnel Handbook".

Policy for Cooperating with the Red Cross

The American Red Cross has accepted responsibility for furnishing the following relief supplies: Food, clothing medicine, medical care. This Headquarters has accepted responsibility for assisting the Red Cross in moving into inaccessible areas for delivery of the above listed relief supplies.

If a need for any of the above supplies comes to the attention of any of the Army people, the need should be reported to the Red Cross. List of Red Cross local representatives will be furnished Area Engineers as soon as completed. Pending receipt of the list, this Headquarters should be notified in order that the Red Cross can be apprised of the need.

Amendment No. 2 to "Foremans Personnel Handbook"

In addition to the types of personnel listed in "Foremans Personnel Handbook" and Amendment No. 1 thereto, Foremen may be hired on emergency temporary appointments (not to exceed one month) and will be paid the rates listed below:

Foreman "Snow Removal"	\$2.10 per hour
General Foreman	\$2.30 per hour

Appointments to these positions will require the execution of the same two forms required for the positions listed in "Foremans Personnel Handbook."

Each Sub-Area Engineer is authorized to hire such foremen as are needed not in excess of one Foreman for each five pieces of major equipment (dozer, plough, etc.) and one General Foreman for each four Foremen.

HEADQUARTERS FIFTH ARMY DISASTER FORCE "SHOWBOUND"  
Room 415 Farm Credit Building  
206 South 19th Street  
Omaha, Nebraska

10 February 1949

SUBJECT: Disposition of Unserviceable Military Equipment

TO: All Area and Sub-Area Commanders.

1. Prior to the evacuation of military equipment which has become unserviceable and which cannot be repaired expeditiously by local facilities, authorized technical inspectors will prepare a technical inspection of the equipment on the prescribed AD AGO Forms, Engr 464 and Ord 461 or 461-5. In cases where the unserviceability was caused by other than fair wear and tear, a certificate will be attached to the technical inspection report, stating that an investigation and a Report of Survey has been initiated. Completed technical inspection forms and Reports of Survey where applicable will be forwarded to this Headquarters with information as to the present location of material for evacuation.

2. This Headquarters will evaluate the above reports and if shipping of the equipment is directed, shipping instructions and a prepared government Bill of Lading will be furnished to the Area or Sub-Area Engineer concerned. Information as to size and type of car or cars to be ordered from the local carrier freight agent will also be furnished by this headquarters. Shippers must maintain close contact with local carrier agents so that loading can be accomplished immediately upon arrival of cars and loaded cars turned over to the railroad within the free time period. Demurrage must be avoided.

BY COMMAND OF MAJOR GENERAL PICK

LOUIS W. PRENTISS  
Colonel, CE  
Chief of Staff

HISTORY

Fifth Army Disaster Operation

"SNOWBOUND"

HEADQUARTERS  
FIFTH ARMY DISASTER FORCE "SNOWBOUND"  
206 South 19th Street  
Omaha, Nebraska

11 February 1949

DEMOBILIZATION PLAN, FIFTH ARMY DISASTER FORCE SNOWBOUND

I. Purpose. The purpose of these instructions is to set up a plan and procedure for the expeditious, orderly, and efficient demobilization of Fifth Army Disaster Force Snowbound.

II. Policy.

1. Estimates as to dates relief operation should cease in the various areas and sub-areas and final determination of dates and hours will be based on telephone directive Fifth Army which is quoted in part as follows: "Where Federal assistance is now being given or will be given in the future, such assistance should be discontinued as soon as the magnitude of the problem has dropped to the point where it can be handled with State and local facilities."

2. Estimates as to date and hour relief operations should cease in sub-areas will be made by area commanders. Final determination as to date and hour relief operations will cease in a sub-area will be made by this headquarters.

3. This headquarters will deal with area commanders who will be responsible for all demobilization activities within their areas.

4. Demobilization activities will be decentralized to area and sub-area commanders to the maximum extent practicable.

5. Demobilization procedure will be promptly initiated upon receipt of orders to demobilize a sub-area or areas and action will be expedited to a final closeout.

6. Equipment owned by Federal agencies other than the Army will be promptly returned "as is" to owning agency.

7. Some Army-owned equipment will be repaired locally and turned over to National Guard officials as temporary emergency reserve equipment.

8. Army-owned equipment not turned over to National Guard will after technical inspection and estimate of cost of repair be returned to points of origin.

9. Maintenance of contractor-owned equipment having been provided for in rental rates, repairs to or payment for repairs for contractor-owned equipment will be made only on specific authority of this headquarters.

10. Military units and personnel not required for demobilization work will be promptly returned to home stations.

11. All headquarters will retain such military and civilian personnel as may be required to insure rapid and efficient demobilization.



III. Procedure.

1. Effective upon receipt of these instructions and prior to the initiation of demobilization, area commanders will:

a. Make daily reports to this headquarters of personnel and equipment surplus to their requirements.

b. Advise this headquarters by telegram 48 hours in advance of hour and date they estimate they will complete work in individual sub-areas.

c. Prior to the initiation of demobilization in any area or sub-area, this headquarters will:

- (1) Advise area commanders as to disposition of personnel and equipment declared surplus by area commanders.
- (2) Secure the necessary clearance and direct area commanders as to hour and date for termination of relief operations and commencement of demobilization.

2. Upon receipt of orders to proceed with demobilization, area commanders will:

a. Notify all contractors by hand-carried letter or telegram that:

- (1) Relief operations terminate (give date and hour)
- (2) On and after such hour and date there will be no further payments for rental or standby time.
- (3) Actual demobilization costs and reasonable overhead charges will be paid effective the cutoff time of operating payments. (Fiscal annex). Copies of such letters or telegrams will be forwarded to this headquarters.

b. Return equipment owned by Government agencies, other than the Army, to owners, notifying them by telegram as to date and hour equipment was released. (Supply Annex). Copies of telegrams will be forwarded to this headquarters.

c. Assemble Army-owned equipment at suitable shipping points and advise this headquarters as to quantity and type at each point.

d. Notify this headquarters 24 hours in advance of readiness to move military units. (Personnel Annex).

e. Clear and close all fiscal matters and accounts. (Fiscal Annex).

f. Close property accounts. (Supply Annex).

g. Close telephone and telegraph accounts; dismantle and ship radio equipment. (Signal Annex).

h. Complete, close, and turn in all records to this headquarters.

i. Terminate all purchases except those essential to accomplish demobilization.

j. Clear and voucher payment all local accounts.

k. Investigate and forward to this headquarters report of investigation of all known claims and accidents.

l. Check with local officials to insure that any grievances, obligations, or misunderstandings are cleared up before departure of commander concerned.

m. Report to this headquarters any matters that cannot be cleared before departure of commander concerned.

n. Report and have sub-area commanders report to this headquarters for final clearance prior to departure for home stations. Final clearance will include:

- (1) Submission of final reports and records. (All Annexes).
- (2) Conference with historical officer and turn-in of written report described in Historical Annex. (Historical Annex).
- (3) Preparation for Commanding General's signature of letters of appreciation to agencies and individuals who have assisted in relief work.

3. During demobilization period this headquarters will:

- a. Issue orders for movement of military units. (Personnel Annex).
- b. Appoint a civilian transportation agent for each area and sub-area for the purpose of issuing travel requests only. (Transportation Annex).
- c. Advise area commanders as to disposal of Army Equipment assembled at shipping points. (Supply Annex).

4. During and after demobilization this headquarters will compile final report and history of Fifth Army Disaster Force Snowbound.

5. Area commanders will make daily reports to this headquarters by phone as to demobilization progress. (Operations Annex).

BY COMMAND OF MAJOR GENERAL PICK:

LOUIS W. PRENTISS  
Colonel, Corps of Engineers  
Chief of Staff

Annexes:

1. Fiscal
2. Supply
3. Personnel
4. Signal
5. Transportation
6. Historical
7. Operations

DISTRIBUTION:

- 5 Ea. Area and Sub Area
- 3 Ea. Staff Section
- 15 C.G., 5th Army, Chicago, Ill.
- 2 C.G., 6th Army, Presidio, San Francisco, Calif.
- 2 C.G., 10th Air Force, Ft. Benjamin Harrison, Ind.
- 2 AG, State of Nebraska
- 2 AG, State of So. Dakota
- 2 AG, State of Wyoming
- 2 C.O., Ninth Naval District

## PLAN FOR DEMOBILIZATION

FISCAL ANNEX (1)

Upon receipt of orders to proceed with demobilization, Area and Sub-Area Commanders will be governed by the following procedures with respect to the functions as indicated.

- a. Termination of Civilian Personnel (Employees hired solely for Fifth Army Disaster Force Snowbound Operations).-In releasing employees serving under temporary appointments in connection with Fifth Army Disaster Force Snowbound operations, the inclosed form "Release of Personnel" will be completed at the earliest opportunity after the Area or Sub-Area Office has been ordered to demobilize. It is important that all portions of this form be carefully completed inasmuch as the data thereon will determine final per diem and salary payments. When employees are terminated, time rolls should be clearly marked, opposite their name. The mode of travel and time of departure should be determined by the Acting Transportation Agent in such manner as to insure a minimum of Government expenditures. The time used in establishing per diem payments will be determined by the estimated time of arrival of the employee at his home station, based on the decision of the Acting Transportation Agent. The date for termination of the employee's time will be confirmed likewise. This form should be prepared in duplicate, a carbon copy to be retained for the Area or Sub-Area records and the original to be forwarded to this headquarters together with a signed Form 1012 for the purpose of facilitating final payment. It will bear the signature of both the employee and the Government interviewer.
- b. Termination of Equipment Rental Agreements.-The inclosed form "Release of Equipment" will be completed, in triplicate, in the Area or Sub-Area Office in the presence of the equipment owner or his representative. One copy will be retained in the Area or Sub-Area Office, one furnished to the owner and the original transmitted to this headquarters. In the event that the owner is requesting reimbursement for mobilization and demobilization costs and such costs can be negotiated to the mutual satisfaction of both the owner and the Government, such costs should be itemized on the inclosed form. If mutual agreement cannot be had as to the amount of such costs, then Area or Sub-Area Offices should submit the claim of the owner on the inclosed form to this headquarters together with copies of supporting papers. The form should be signed by both the owner and the Government representative. Separate Forms 403 should be submitted for rental and mobilization and demobilization costs. To facilitate payment obtain two Forms 1034, certified by the contractor, for transmittal to this headquarters. One Form 1034 will be used for rental payments and the other for mobilization and demobilization costs.
- c. Execution of Field Purchase Receipts, Form 292.-Insure that Field Purchase Receipts, Form 292, have been prepared and submitted to this headquarters for all services or materials rendered locally.
- d. Disposition of Files.-All files should be carefully boxed and delivered to this headquarters.

RELEASE OF PERSONNEL

NAME:

DESIGNATION:

MAILING ADDRESS:

REPORTING LOCATION \_\_\_\_\_ FROM \_\_\_\_\_

RETURNING LOCATION \_\_\_\_\_

MODE OF TRAVEL & TIME OF DEPARTURE \_\_\_\_\_

PER DIEM WILL BE PAID TO (Time and date of arrival at destination) \_\_\_\_\_

EMPLOYEE WILL BE CARRIED ON TIME ROLLS UNTIL (Time and date) \_\_\_\_\_

\_\_\_\_\_ .\*

Signed by \_\_\_\_\_  
(Above-named employee)

\_\_\_\_\_  
(Government Interviewer)

\* Show this time on the time roll.

RELEASE OF EQUIPMENT

EQUIPMENT OWNER:

CONTRACT NO.:

MAILING ADDRESS:

BRIEF LIST OF PLANT INVOLVED: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

ORIGINAL SHIPPING POINT OF ABOVE EQUIPMENT: \_\_\_\_\_

POINT AT WHICH RENTALS STARTED: \_\_\_\_\_

POINT OF RELEASE: \_\_\_\_\_

TO BE RETURNED TO: \_\_\_\_\_

RENTAL TO BE PAID UNTIL: \_\_\_\_\_

ITEMIZE ANY MOBILIZATION & DEMOBILIZATION COSTS BELOW:

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Signed by: \_\_\_\_\_  
(Equipment Owner or Representative)

\_\_\_\_\_  
(Government Representative)

## PLAN FOR DEMOBILIZATION

## SUPPLY ANNEX (2)

## I. EQUIPMENT.

When an area or sub-area has been designated in a state of demobilization, the Area Commander will, as equipment becomes available for release, immediately report by wire or telephone to this Headquarters, Attention: Equipment Section, observing insofar as practicable the following priorities:

First: Contractor owned equipment.

Second: State, County, or other local government owned equipment.

Third: Navy or other Federal government owned equipment except Army.

Fourth: Army owned equipment.

## A. Contractor Equipment.

1. The name of the contractor owning the equipment together with his address and list of equipment rented will be furnished. Also information as to whether the equipment will be returned by lowboy or railroad should be given if available. In this connection, lowboys working in the area should be made available for these shipments, taking into consideration certain lowboys will be required to load out rail shipments.

## B. Army Equipment.

1. Prior to evacuation, all Army equipment will be given a technical inspection by qualified Ordnance and Engineer inspectors from this Headquarters who will record the condition of the major items on appropriate forms according to existing regulations. Copies of these prepared forms will be sent to the consignee and to this Headquarters. Assemblies, spare parts, and other supplies will be evacuated to installations designated by this Headquarters in an "as is" condition by truck or rail.

2. All Army equipment that is to be shipped will be collected by Area Commanders at suitable shipping points, and this Headquarters advised by wire when accomplished. Drivers of wheeled vehicles that are to return by road will be given routing instructions to points of final destination subsequent to technical inspections.

3. All government equipment that has not been shipped will be reported to this Headquarters with the location on an overlay with justification of non-shipment.

4. Upon receipt of proper authority to ship U. S. Government property back to its final destination, you will submit one copy of the issue slip (DA AGO 446) to this Headquarters for the attention of the Chief, Supply Section. For those items against which your Memorandum Receipt signature is held in this Headquarters, there will be issued a credit relieving you of such responsibility. It is essential, when reporting the return of U. S. Government property, that full descriptive details (registry numbers, locations, etc.) be included so that the demobilization records can be accomplished with the minimum of delay.

5. All army property that has been designated as emergency reserve equipment will be segregated at points selected by Headquarters, Disaster Force Snowbound.

## II. WINTER CLOTHING.

1. All personnel and all units, excepting troops from Camp Carson, Colorado, and Fort Knox, Kentucky, who brought winter clothing with them from their home stations, will immediately turn in all items of clothing of this nature, drawn from "Disaster Operation Snowbound", to the Area Engineer in charge of each Area. The Area Engineer will be responsible for transporting this clothing in the most expeditious manner possible to the Quartermaster, Offutt Field, Nebraska.

## III. SHIPPING INSTRUCTIONS.

1. These instructions are published for the information of and guidance of Area Engineers for the preparation of demobilized military equipment subsequent to the receipt of shipping directions from this Headquarters.

2. Loading Rules for rail shipment of Tracked and Wheeled Equipment: All Military Equipment shipped by Rail must be prepared to prevent damage, corrosion and deterioration during the period of movement.

(a) Railroad cars must be inspected to ascertain if they can carry loads to destination.

(b) The load should clear brake wheels.

(c) Load limits should not be exceeded.

(d) Clearing limits must be within those established by the carrier.

(e) Blocking will be in accordance with requirements as prescribed by the Association of American Railroads. Additional blocking may be added at the discretion of the Officer in Charge.

(f) Chock blocks, side cleats, strapping (No. 8 gage black annealed wire) cleats, etc., will be procured and/or fabricated locally.

(g) All organizational equipment, such as tools, received with the vehicles will be boxed, if practicable, and accompany the vehicle. Surplus spare parts, supplies, tools and equipment, procured from army stocks or procured and/or fabricated locally will be shipped either by rail or truck to the following points:

Engineer Property--Corps of Engineers, Florence Boatyard,  
9600 River Drive, Omaha, Nebraska

Quartermaster Property--Quartermaster, Offutt Air Force Base,  
Fort Crook, Nebraska

Ordnance Property--Fifth Army Area Ordnance Shop, Offutt Air  
Force Base, Fort Crook, Nebraska

In this connection, government trucks will be utilized to the maximum for the transportation of parts, supplies and equipment.

3. Extreme vigilance will be exercised to return all government property to Military supply channels for the purpose of property clearance of all concerned.

PLAN FOR DEMOBILIZATION

Personnel Annex (3)

Military

1. Definition of personnel

- a. Army personnel - Personnel, officers and enlisted men, who are assigned to units of the Regular Army.
- b. Casual personnel - Personnel, officers and enlisted men (Army), whose parent organization is not temporarily stationed in the area designated for demobilization.
- c. Personnel - Personnel, officers and enlisted men (Army), whose parent organization is temporarily stationed in the area designated for demobilization.

2. A personnel officer will be designated in each area by the area commander and his name reported to this headquarters immediately. Upon notification of demobilization, he will perform the following duties.

- a. Coordinate the movement of all casual personnel according to directive issued by this headquarters.
- b. Prepare and forward this headquarters a roster of all casual personnel (Army), officer and enlisted men, in each area headquarters and sub-area being demobilized, including name, grade, serial number, parent organization and permanent station and present location.

3. No casual personnel will be moved from present location (location given on roster required in paragraph 2 above) without prior approval of this headquarters. Commanding officers of organizations temporarily stationed in the demobilization area will be responsible to the area commander for personnel of their organization and for their movement from demobilization area to permanent station.

4. Casual personnel will be moved by most direct route from present location to permanent station.

5. Area commanders will forward all recommendations for awards and decorations to this headquarters within 10 days after completion of operations and demobilization.

6. Any unused portion of T/Rs or meal tickets will be turned in to the nearest transportation officer.

Civilian

1. Supervisory and clerical personnel. Personnel from the Districts within the Corps of Engineers should be released as 1st priority and returned promptly as possible to their home station. However, such key personnel from this group as are necessary to clear equipment shipment, personnel records, cost and fiscal accounts, etc. should be so selected and retained in the Area as required for release upon completion of their assignment.

a. As personnel of the above classification are released to their home station, this office will be advised, Attention: Personnel, as to name and time of departure and destination.



b. Passenger carrying vehicles, i.e., sedans and pickups, from Corps of Engineers District Offices and sub-offices are to be returned to their home station with the supervisory or clerical personnel referred to in paragraph 1 above, whenever practicable. Action on this type of transportation vehicle should be similarly reported as outlined in paragraph 1a.

c. Return transportation should be issued to employees not holding return T/Rs or portion of unused tickets or where transportation is not available to home station through passenger vehicles being released as outlined in paragraph 1b.

2. Supervisory and clerical personnel employed locally by the Area should be released as 2d priority except when their services cannot be utilized in the demobilization plans. The latter classification becomes 1st priority for release.

3. Labor

a. Operators of contractors' equipment will be released first.

b. National Guard, Army Reserve and Naval Reserve personnel will be released next.

c. Civil Service operators will be relieved from snowbound duty last in the following order:

Permanent District Civil Service employees first.  
Temporary Duty Civil Service employees last.

d. All employees hired for Operation Snowbound who are under temporary duty travel orders away from their home or point of hire will be carried on field time rolls for 8 hours travel time beyond their last hour of duty unless they can return home in less than 8 hours in which event they will be allowed normal travel time to their home or point of hire.

PLAN FOR DEMOBILIZATION  
SIGNAL ANNEX (4)

Upon issuance of competent orders from Headquarters Fifth Army Disaster Force Snowbound, the following instructions will apply:

a. Radio

- (1) Radio stations will remain open until orders to close are received from this headquarters.
- (2) The operating personnel at each radio station will be responsible for dismantling, packing and shipping the radio equipment. Operators will coordinate movement of equipment by aircraft, rail or truck with the local Area or Sub-Area Commander. Operating personnel will not depart station before the equipment.
- (3) Radio equipment will be shipped as follows:

- (a) Ainsworth, Nebraska  
 O'Neill, Nebraska  
 Valentine, Nebraska  
 Gillette, Wyoming

To: Inspector Instructor  
 Naval Reserve Training Center  
 Fort Omaha  
 Omaha, Nebraska

- (b) Alliance, Nebraska  
 Neligh, Nebraska

To: Transportation Officer  
 Strategic Air Command  
 Offutt Air Force Base  
 Ft Crook, Nebraska  
 Attention: Communication Officer

- (c) North Platte, Nebraska

To: Inspector Instructor  
 Naval Reserve Training Center  
 Lincoln, Nebraska

- (d) Broken Bow, Nebraska  
 Mullen, Nebraska  
 Chadron, Nebraska

To: Omaha District Engineer  
 1709 Jackson Street  
 Omaha 2, Nebraska  
 Attention: Radio Engineer

- (e) Rawlins, Wyoming

To: Inspector Instructor  
 Naval Reserve Training Center  
 Denver, Colorado

b. Telephone and Telegraph Accounts.

- (1) Telephone accounts: Telephone services procured locally should be covered by a "Field Purchase Receipt", MRD Form 292, and the executed Form 292 should be distributed as per instructions printed thereon. Vendors invoices covering such services should be submitted to this headquarters in duplicate. Services furnished should be

APPENDIX I

itemized on the invoice in sufficient detail to show what the charges are for. The original only of the invoice should be certified by the vendor as follows:

I certify that the above bill is correct and just; that payment therefor has not been received; that all statutory requirements as to American production and labor standards, and all conditions of purchase applicable to the transactions have been complied with; and that State or local taxes are not included in the amounts billed.

Payee \_\_\_\_\_  
(Name of company)

Per \_\_\_\_\_  
(Name and title)

Charges for long distance telephone calls should be supported by a telephone toll statement, in duplicate, prepared by the telephone company, showing the date, place called, total charges, minutes and class or type of call (person to person, station to station, etc.). ENG Form 403, Receiving and Delivery Report, should be executed to cover each invoice and submitted in duplicate to this headquarters with the invoice.

- (2) Telegraph Accounts: Telegraph services need not be covered by a "Field Purchase Receipt", MRD Form 292. Vendor's invoices covering such services should be submitted to this headquarters, in duplicate, accompanied by the original messages; viz, the copy bearing the operator's original notation or endorsement of transmission showing actual performance. It is immaterial whether the copy bearing these notations is a ribbon or carbon copy. Charges for messages received Government collect will be supported by the impression copy of the message. Where messages have been telephoned to the telegraph office, the message made at that office for transmission is acceptable. Where an identical message is sent to two or more destinations, the wire or copies from which transmissions were actually made are considered to be the originals. The original only of the invoice should be certified by the vendor the same as for telephone services. ENG Form 403, Receiving and Delivery Report, should be executed to cover each invoice and submitted in duplicate to this headquarters with the invoice.

PLAN FOR DEMOBILIZATION

TRANSPORTATION ANNEX (5)

1. Transportation of Personnel.

- a. Government passenger vehicles returning to Omaha will be utilized to the fullest extent in returning Operation Snowbound personnel of all categories.
- b. Civilian employees of the Government who presently are performing duties as clerks in the various area and sub-area offices will be appointed as Civilian Transportation Agents by this headquarters in accordance with procedure outlined in AR 55-105, Par. 3, Change 9, dated 8 February 1944, for the purpose of issuing transportation requests only. In connection therewith a book of blank transportation requests will be furnished to the designated Transportation Agent simultaneously with his letter of appointment in order that the movement of personnel, i.e., military, government and temporary duty, may be accomplished efficiently and expeditiously when the necessity arises for the use of commercial transportation.
- c. Unused transportation requests and/or tickets will be turned over to the nearest Transportation Officer or Transportation Agent for cancellation.

2. Transportation of Freight.

- a. Upon receipt of request for shipment of equipment, the Transportation Officer, this Headquarters, will have government bills of lading prepared in this headquarters and forwarded by most expeditious means to responsible Operation Snowbound representative at shipping point. Full instructions will be furnished on handling bills of lading. Concurrently with above action, responsible representative will be advised by Transportation Officer, this headquarters, as to type and size of cars to order for the particular items of equipment he is shipping. Operation Snowbound representative responsible for loading and shipping must maintain close contact with the local carrier freight agent so that loading can be accomplished in the free time period. If it becomes apparent that demurrage charges will be incurred, this headquarters will be furnished full information immediately.
- b. Loading, blocking and bracing must be performed in accordance with pertinent D/A and carrier regulations. (See Supply Annex)

PLAN FOR DEMOBILIZATION  
HISTORICAL ANNEX (6)

1. In order to retain the experiences of Operation Snowbound for possible future use by the Army, each Area and Sub-Area Engineer will submit an "After-Action Report" to the Historical Section of Operation upon demobilization. This report will cover any or all of the subjects listed below. All phases of the Operation are to be considered, such as snow and ice clearance from roads, railways, bridges, etc., relief of distressed persons and cattle, field maintenance, supply, and evacuation. Equipment referred to will be adequately described to permit exact identification.

- a. Brief report of any incident which contains a military lesson.
- b. Unusual techniques or improvisations by military or civilian personnel.
- c. Mechanical failures or limitations due to the nature of the operation.
- d. Comments on communications.
- e. Comments on performance of field maintenance as affected by snow clearance and cold weather (civil and military).
- f. Comments on the employment of air equipment.
  - (1) Relief
  - (2) Reconnaissance
  - (3) Supply
  - (4) Communications
- g. Organization within Areas or Sub-Areas.
- h. Comments on any other problems or subjects that are believed to be of value.

2. Individual reports from the following staff branches of Headquarters Operation Snowbound will be submitted to the Historical Section upon demobilization. Requirements for these reports have been given orally:

- A. Air Officer
- B. American Red Cross
- C. Public Information Office
- D. Personnel
- E. Signal
- F. Ordnance
- G. Engineer
- H. Supply

PLAN FOR DEMOBILIZATION

OPERATIONS ANNEX (7)

DAILY REPORT OF SUB AREA \_\_\_\_\_

For 24 Hours Ending 1800 \_\_\_\_\_  
 \_\_\_\_\_ Day \_\_\_\_\_ Month

PERSONNEL & EQUIPMENT

(1)		(2)	
<u>Personnel on Hand</u>		<u>Equipment on Hand</u>	
Army:		Dozer	a _____
Officers	a _____	Truck Plow	b _____
E.M.	b _____	Rotary Plow	c _____
Air Force	c _____	Trucks	d _____
Navy	d _____	Weasels	e _____
National Guard	e _____	Patrols	f _____
Civil Service	f _____	Lowboys	g _____
Contractor	g _____	Sedan & Pickups	h _____
Other	h _____		

INFORMATION FOR TRANSPORTATION ON DAILY REPORT FROM THE FIELD

(3) Railroad cars spotted for loading today:

Car Number	Loading Point

(4) Railroad cars loaded and released for shipment today:

Car No.	Loading Point	Destination	Contents	Contractor's name or Govt.

- (5) Lowboys:
- (a) Available for return shipments \_\_\_\_\_
  - (b) Additional required \_\_\_\_\_
- (6) General Situation and Local Problems (brief)
- 1
- (7) Any problems or difficulties that this Headquarters can solve or help solve:
- (8) Weather Conditions in Sub Area during 24-Hour Period (include brief details of winds causing drifting, or precipitation.)

HISTORYFifth Army Disaster Operation"SNOWBOUND"DISPOSITION OF STAND-BY EQUIPMENT LEFT IN  
RESIDUAL RESERVENebraska

Weasels:	Lincoln	14
	Alliance	5
	Gering	3
	North Platte	3
		<u>25</u>

Wyoming

Bulldozers:	Cheyenne	2	Weasels:	Cheyenne	2
	Casper	4		Casper	2
	Douglas	2		Lander	2
	Lusk	2		Newcastle	2
	Gillette	2		Guernsey	4
	Laramie	2		Rawlins	2
	Lander	4		Sheridan	2
	Newcastle	4			<u>16</u>
	Guernsey	4			
	Rawlins	4			
		<u>30</u>			

South Dakota

Weasels:	Lemmon	2
	Bison	2
	Faith	2
	Rapid City	3
		<u>9</u>



HEADQUARTERS  
FIFTH ARMY DISASTER FORCE "SNOWBOUND"  
206 South 19th Street  
Omaha, Nebraska

25 February 1949

Major General Paul L. Williams  
Commanding General  
Tenth Air Force  
Ft. Benjamin Harrison, Indiana

My dear General Williams:

On Sunday I intend to leave for my new duties in Washington. On the eve of my departure, I wish to express my sincere appreciation for the splendid cooperation and magnificent performance of the United States Air Force personnel and equipment, which has been engaged under my direction, in the operations of the Fifth Army Disaster Force "Snowbound". Without exception, the pilots, crews, and staff officers have promptly, cheerfully, and successfully carried out every request I have made. The accomplishment of many of these requests involved the operation of aircraft under hazardous conditions. The cheerful acceptance of these conditions by pilots and crews, together with their prompt execution of all missions, has increased my already high regard for the officers and enlisted men of the United States Air Forces.

The agreement reached between our respective headquarters as to the relationship between your and my command has worked without a hitch. I consider it a perfect illustration of the manner in which the Army and the Air Forces can work together toward the accomplishment of a common mission.

I wish to especially commend Lt. Col. Joe K. McNay and his assistants on duty in my headquarters. These officers have worked harmoniously with the other members of my staff and at all times have been outstanding in their attitude of cooperation and cheerful willingness to carry out every request made on them. For your information, the names of these officers and enlisted men are as follows:

Lt. Col. Joe K. McNay	AO 30786	Team Commander
Lt. Col. Allen H. Wood	AO 33180	Operations Chief
Maj. James L. Huddleston	AO 46255	Operations
Capt. Richard M. Hairston	AO 2044641	Photographic Officer
Capt. Richard K. Anderson		Photographic Officer
1st Lt. Jimmie M. Jernigan	AO 762471	Operations
2nd Lt. Frederick W. Carter	AO 2085601	Public Information Officer
S/Sgt Andrew J. Staricek	AF 33148011	Operations Clerk
Sgt. Maywood L. Teitsworth	AF 37374517	Administrative Clerk

Again, my appreciation for the invaluable help rendered by your command and especially for the splendid spirit of selfless cooperation that has been exhibited by all concerned.

Sincerely yours,

LEWIS A. PICK  
Major General, CE  
Commander

HISTORYFifth Army Disaster Operation"SNOWBOUND"AIR FORCE OPERATIONSOPERATION "HAYRIDE" PRIOR TO "SNOWBOUND"

Following the blizzards in early January, the Commanding General of the Tenth Air Force was informed by the Governor of Nebraska that the northwest portion of the state was snowbound, and was requested to assist in relieving lack of fuel, food, and feed for cattle in the affected area.

Upon the authority of the Commanding General, Continental Air Command, the Tenth Air Force was given the responsibility for Disaster emergencies in the affected area as delineated in AF Reg 23-1, 11 Jan 49. The Tenth Air Force organized the "Tenth Air Force Domestic Emergency Relief Team" to bring rapid relief to the area as requested by the Governor. This team was organized 12 January and arrived in Lincoln, Nebraska on that date. After reviewing the situation, an operational control board was established in the office of the Adjutant General of Nebraska. Through the co-ordinated efforts of the Red Cross, the Adjutant General, State Highway Department, State Aeronautical Department, telephone companies and railways, the team was able to keep abreast of the situation.

On 13 January, liaison was established with the Executive Officer of the Nebraska Military District of the Fifth Army.

On 21 January, it was believed that the emergency had terminated and the team was released to home stations. However, recurring blizzards required the reestablishment of the team on 24 January. By this time the disaster area had expanded from Nebraska to include South Dakota, Colorado, and Wyoming. To fully coordinate the far flung activities of "Hayride", operational headquarters for relief activities was established at Lowry AFB, Denver, Colorado, and Liaison Officers were sent to the capitals of the states of Wyoming, Nebraska, South Dakota and Kansas. The team leader acted as Liaison Officer for the state of Colorado in addition to his other duties.

Requests for missions for the relief of towns, ranches, farms, etc., were submitted to the respective State Adjutant General's Office where they were screened and priorities given to each mission. Requests for missions were transmitted to Operational Headquarters "Hayride", Lowry AFB by the Liaison Officers at the various state capitals.

OPERATIONS WITH "SNOWBOUND"

Operations continued on the above basis until the formation of Operation "Snowbound". On 3 February, a conference was held between the Commanding General, Operation "Snowbound", and a staff representative of the Commanding General, Tenth Air Force, to discuss coordination of Air Force activities with Army operations. As a result of this conference, Operational Headquarters for "Hayride" was moved to Headquarters "Snowbound" and became an integral part of the staff.

Civil Air Patrol aircraft participated in both Operations "Hayride" and "Snowbound". Daily activity reports are not available at this time and will be included at a later date in the official Air Force report from Headquarters, Tenth Air Force.

The major responsibility of the Air Force Section, Headquarters Operation "Snowbound" was to evaluate and coordinate requests for air assistance which were received. After evaluation, missions were assigned to one of the following operational bases:

Lowry Air Force Base  
Kearney Air Force Base  
Weaver Air Force Base  
La Junta Air Force Base  
Casper Air Force Base  
Offutt Air Force Base  
Marshall Air Force Base  
Cheyenne Air Force Base

The 809th Avn. Engr. Bn., 3450th Technical Training Wing, Ft. Francis E. Warren, Wyoming furnished bulldozer spreads for Operation "Snowbound" and came under the operational control of the Sub-Area Engineer for the state of Wyoming. Daily progress reports of this unit are consolidated with the reports of Sub-Area X.

By 25 February the requirements for airlift had been reduced to the point where it was agreed between the Commanding General, "Snowbound", and the representative of the Commanding General, Tenth Air Force, that the Air Section of Headquarters "Snowbound" would be transferred to Offutt AFB. Five cargo-type aircraft were assigned for the support of the remainder of Operation "Snowbound".

#### AIR FORCE OBSERVATIONS

##### Drop Area Identification

Two types of hay drops were used -- one, directly to the herd, and the other to the farmer who collected the hay and fed it to stock at proper intervals. Where hay was dropped direct to the herds, whenever possible, a local guide familiar with the community was made a part of the aircraft crew and at his direction the hay was dropped. Hay that was dropped direct to the farmer and no local guide was available, the means of designating the drop area was by building a fire on the ground.

##### Major Lessons or Experiences Gained From Operations "Hayride"

The complete disaster operations proved conclusively that coordinated efforts between Air Forces, Army, Navy, Red Cross, Civilian Agencies, and State Administrative Offices could work in a combined effort in perfect harmony, so long as adequate plans were available and a centralized clearing house (or command) was exercised in all echelons.

##### Weather Reports Furnished By The Air Forces

Weather reports for the flying operations were furnished by the Team Commander, the Air Division "Hayride" of Disaster Force "Snowbound" twice during the 24 hour periods daily. A 2400 hour report and 1200 hour report. Maps were picked up at 0930 in the morning and 1730 in the evening and delivered to the Air Division and upon receipt, the Air Officer in charge reviewed and studied the weather situation and briefed General Pick and General Stewart as soon as possible.

##### Helicopters Requested From Ground Force Board

Helicopter missions concerning the evacuation of sick or injured. No patients were evacuated by litter as such; however, patients were evacuated by helicopter in a sitting position inside of the aircraft itself, even though such patients may have arrived at the aircraft in a litter.

##### Helicopter in Wyoming

Helicopters from Tenth Air Force and from Air Training Command, were dispatched to Wyoming to assist in the critical areas of Rawlins, Douglas, and Casper. Due to the high winds that were prevalent within those areas, it was impossible to use them.

TYPES OF MISSIONS

The following tonnages were either dropped or air landed during the operation:

Hay	1940.80 Tons
Rations	51.14 Tons
Clothing	14.70 Tons
Blankets	5000
Alfalfa Pellets	12 Tons
Comm Equip	4.20 Tons
Radio Beacon	
Medical Supplies	
1/2 oz. Radium	
5000 cc Plasma	
200 lbs various Medicines	
Army equip	11.62 Tons
Coal	21.35 Tons
Flour	1 Ton
A/C Parts	25.55 Tons
Parts Misc	2250 Lbs
Weasels	77 Each
Photo & Visual Recon Hrs	217.85
Fresh Milk	10.50 Tons
Fuel	875 Gals
A/C Skis	3.35 Tons
Personnel	483
Snowplow	1 Each
Jeep	1 Each

EQUIPMENTTypes of A/C Employed

C-47	RF-80
C-46	RF-51
C-82	H-5
C-45	L-5
RB-26	

USAF Equipment Other Than Aircraft Utilized (Estimated)

Snogos	8
Snowplows	2
Federal Tractors	4
Oil Trucks	2
Staff Cars	2
Jeeps	2
Weapons Carriers	10
F-2A Trailers	4
Flat Beds	2
6x6 trucks	8
Pick-up	1
Cletrac	1
Bus Passenger K5	3
Wrecker Diamond T	1
Tractor 4x5 W/Trailer	7
Radio Beacon Homing	1 SCR 188
Keyer	1

Equipment from 809 Engr Avn Bn, 3450 Tech Tng Wing

27 Dozers

12 Patrol Graders

19 Lowboys

42 Vehicles

HEADQUARTERS "DISASTER OPERATION SNOWBOUND"  
Room 415, Farm Credit Building  
206 South 19th Street  
Omaha, Nebraska

4 February 1949

MEMO TO: Lt. Col., Joe McNay

SUBJECT: Air Force Operations, Fifth Army Disaster Area

1. Reference is made to the conference on the morning of 3 February 1949 between Colonel De Ford, U. S. Army Air Force, representing the Commanding General of the Tenth Air Force, and Major General Lewis A. Pick, Commanding General, Fifth Army Disaster Operation Snowbound, at which you were present.

2. In accordance with that agreement you have been designated the Air Officer of this Command.

3. Agreements reached in the conference referred to in paragraph 1 above include the following:

a. All requests for Air Force missions in connection with Fifth Army Disaster Snowbound Operations will be channeled into General Pick's office. The Operations Division of General Pick's office, headed by Colonel Berrigan, is designated as the agency of this Headquarters for handling requests presented by you in accordance with agreement referred to above.

b. Your designation as Air Force Officer of this Command and the location of your Headquarters in General Pick's office is not to affect in any way Air Force personnel stationed throughout the disaster area. In other words, Air Force command and administrative channels are not affected.

4. In the interests of expediency and to avoid delay, Air Force missions flown for Red Cross to relieve human suffering are excepted from the understanding set forth in paragraph 2a, above. In such cases the local Red Cross representative at the base is authorized to submit his request to the local Air Force representative who is authorized to set up the necessary missions, if planes are available. If planes are not available to the local Air Force representative he should make a request to the Commanding General, this Command, attention Air Force Officer.

5. Normal Red Cross missions should be reported to Operations Division, this Headquarters, each day as planned for the next day's operation.

6. You are requested to submit a daily report to the Operations Division, this Headquarters, prior to midnight each day, covering the preceding 24 hours ending at 1800 hours. This report will be used in connection with daily report of this Headquarters to Commanding General, Fifth Army. It may be in any form convenient to you, but should include the following:

a. Planes available for the following day.

b. Missions flown during the period covered by the report.

c. Normal or routine missions scheduled for the next 24 hours, including Red Cross missions referred to in paragraph 5, above,

SUBJECT: Air Force Operations, Fifth Army Disaster Area (Memo 4 Feb 49  
Brig. Gen., G. C. Stewart to Lt. Col., Joe McNay.)

d. Any information obtained through your operations which is obviously of interest to General Pick, such as unusual incidents or conditions noted by Air Force personnel.

7. It will be appreciated if you will let me know when all Air Force officers assigned to Disaster Operations "Snowbound" have been instructed as to agreements referred to or indicated in this memorandum.

FOR THE COMMANDING GENERAL, FIFTH ARMY DISASTER OPERATION  
SNOWBOUND:

/s/ G. C. Stewart  
G. C. STEWART  
Brigadier General  
Assistant Commander

cc: General Pick  
Colonel Prentiss  
Colonel Berrigan

HISTORYFifth Army Disaster Operation"SNOWBOUND"RED CROSS

The Red Cross had been carrying on disaster operations in sections of South Dakota, Wyoming and Nebraska since January 3, 1949. From the outset, since the affected area was so extensive, authority was delegated to local Red Cross officials in the affected chapters to meet all disaster-caused human needs. National staff members normally assigned to work with the affected chapters assisted by advising and coordinating chapter disaster operations. This staff coordination proved most valuable in that it enabled the human needs present in one snowbound chapter to be met by utilizing resources available in adjacent chapters. The neighborly spirit of the Red Cross was exemplified over and over by neighbor chapter cooperation.

It was not deemed necessary at the outset of this operation to set up a separate disaster headquarters due to the scattered but extensive nature of the operation. Such direction as was needed was provided by Disaster Service in the Midwestern Area Office, St. Louis, Missouri.

Immediately after Operation "Snowbound" was initiated, contact was made between Headquarters and Mr. John C. Wilson, Vice-President-Area Manager of the American Red Cross in St. Louis. Mr. Wilson advised that he would send Mr. Donald W. Stout, Assistant Manager, to Omaha immediately with full authority to take whatever action might be necessary to carry out the traditional Red Cross disaster services in the affected area as well as coordinate all such activities with the Army. Mr. Stout departed immediately and upon his arrival at the Headquarters of Operation "Snowbound", located in the Farm Credit Building, 19th and Douglas Streets, Omaha, Nebraska, he assumed full responsibility for the remainder of the Red Cross portion of the total operation. Immediately after his arrival he conferred with the Commanding General and agreement was reached regarding the relations between the Army and Red Cross for the remainder of the operation. Generally speaking, if the roads were open, there was no disaster. Therefore, the principal task of the Army was to clear the roads and restore normal transportation, communication and supply channels as rapidly as possible. The principal mission of the Red Cross was to carry out its traditional services and meet all emergency human needs until normal transportation and communications were reestablished. Red Cross requests for military equipment, supplies and personnel to alleviate human distress had top military priority.

Subsequent conferences were held between the Army and the Red Cross on all levels and constant liaison was maintained. There has been a constant sharing of information which has greatly aided the accomplishment of the joint objective.

Since the authority had been delegated to the Chapters at the outset and since the territory to be served was so extensive, even though Red Cross set up a disaster headquarters in Omaha, it was decided that the basic operating plan of the Red Cross should not be changed. The decentralized operation continued but with an administrative structure that closely paralleled that which the military established. Each state had a coordinator who reported to Operation "Snowbound" Headquarters in Omaha, and this coordinator was responsible for the sub-areas established in the state. The Army appointed a liaison officer at each state capitol to coordinate with state agencies. The Red Cross used its State Relations Officers, having state liaison responsibility, as its coordinators and located them in the same office at each state capitol as was located the local headquarters of Operation "Snowbound". The military appointed sub-area commanders to coordinate snow clearance activities within sections of each state. Each sub-area included several counties and had its headquarters at critical or strategic locations within the



sub-area. Where possible, the Red Cross and the Army located their field offices together in the same town. The parallel structure provided maximum liaison, coordination and cooperation at all levels of responsibility. The Red Cross organization was the more decentralized of the two because it authorized local chapters to act, whereas the lowest administrative echelon of responsibility in the military channel was the sub-area commander. However, liaison was maintained between chapters and Army personnel on group level in county seats.

On February 2, 1949, due to human distress caused by snow-blocked roads in North Dakota, the Governor of that state asked the Red Cross to meet the basic emergency needs of the affected families. This emergency action commenced immediately. In the meantime, more blizzards swept North Dakota. On February 12, 1949, the Governor asked the Federal Works Administrator to approve certain counties for Fifth Army snow-removal action, and this was done.

While the military observed the boundary lines of their operation approved for action by the Federal Works Administration Coordinator, the Red Cross met emergency needs of some isolated, snowbound families in adjacent counties. Family emergencies did temporarily exist at such places without being numerous enough to require expenditure of federal funds. These emergencies were met by the Red Cross through its own resources.

Several emergency situations developed on various Indian Reservations throughout the snowbound area. At the request of the Bureau of Indian Affairs, the American Red Cross agreed to and met all basic human needs on Indian Reservations when either the roads were blocked to the Reservation or the Reservation had insufficient funds to meet its own emergency situation. Upon request of the Reservation Superintendent to the nearest Red Cross representative, the Red Cross stepped in and met the needs until either normal transportation was restored or until additional funds were secured by the Reservation from the Bureau of Indian Affairs.

Army and Air Force personnel materially assisted the Red Cross in carrying out the Red Cross portion of the total operation. In addition to this active service personnel, the Civil Air Patrol and the National Guard worked closely with the Red Cross. The National Guard of the various states, through agreements worked out with the Red Cross, assisted from the outset of the storm condition, which was prior to the establishment of Operation "Snowbound". National Guard equipment and personnel were utilized fully before the Red Cross requested additional help from the Army and Air Force.

The Civil Air Patrol and the American National Red Cross have a national agreement whereby the Red Cross can call upon the Civil Air Patrol to furnish pilots and planes in event of disaster. Much use was made of the Civil Air Patrol during the operation. Captain Frank Bowman, Air Force Liaison Officer who served with the Civil Air Patrol in the state of Nebraska, where perhaps the most extensive use was made of their services, gave the following report of CAP operations:

50 CAP pilots were used, flying 4 military aircraft and several private planes. Interim reports showed that 261 missions were performed, accounting for a total of 370 hours, 50 minutes of flying time.

The services of the National Guard and the Civil Air Patrol materially aided the Red Cross in accomplishment of its objective.

## STATISTICAL SUMMARY OF RED CROSS ACTIVITIES

Number of counties affected.....	135
* Number of Chapter volunteers working more or less regularly scheduled hours.....	1,329
Total National Staff assigned to the Disaster Operation.....	20
Number of planes (all types) operating for the Red Cross.....	348
Number of weasels, snowmobiles, and other ground vehicles operating for the Red Cross.....	370
(Some of the planes used on Red Cross missions were military aircraft operated by the Air Force, National Guard, and CAP. CAP pilots also operated several private planes during this operation. The bulk of the flights, due to the extensive emergency situation, were flown by local commercial and private pilots employed by local Red Cross Chapters. Most of the ground vehicles operating for the Red Cross were military vehicles operated by Army and National Guard personnel.)	
** Total number of Red Cross services by both plane and ground vehicle.....	14,565

## Breakdown:

## Planes.

a. Reconnaissance.....	1,768
b. Evacuation.....	644
c. Families assisted with food, fuel and medicines....	7,866
d. Total Red Cross services by ground vehicles.....	9,478

## Ground Vehicles.

a. Reconnaissance.....	791
b. Evacuation.....	232
c. Families assisted with food, fuel and medicines....	4,064
d. Total Red Cross services by ground vehicles.....	5,087

## Special emergency assistance situations:

Number of Canteens operated.....	7
Total number of days all Canteens in operation.....	51
Total number of meals served by all Canteens.....	17,419
Number of shelters operated.....	6
Total number of days all shelters operated.....	32
Total nights lodging supplied.....	2,546

Number of Indian Reservations given assistance.....	8
(In addition to supplying emergency food, fuel, medicine and clothing, as requested by the various Indian Reservation superintendents in the snowbound area, four Red Cross disaster reserve nurses worked in the Pine Ridge Indian Reservation Hospital during the emergency period due to an abnormally high number of patients. Various medical evacuations were made by the Air Force and private planes to appropriate Indian Reservation Hospitals. On 22 February, upon the request of the Indian Reservation Hospital at the Winnebago Agency, the Red Cross made arrangements to have the Air Force fly 4 tubercular patients to the Rapid City Indian TB Hospital.)	

\* This figure does not include hundreds of other volunteers who worked irregularly during the long emergency period.

\*\* This figure does not include 471 families in Wyoming who were provided assistance where no transportation was involved.

Significant Points:

1. There was no precedent for this type or scope of operation.
2. The forces of the Red Cross and military were mobilized rapidly to combat the perilous situation. It was equally important to demobilize as rapidly as normal transportation was restored.
3. The organizational structure of the Red Cross has again proved itself of inestimable value in this disaster.
  - a. Local chapters, normally having county jurisdictions, cover all parts of the United States. These chapters are headed by representative volunteers. Contact can be made with any of them to request action, secure information, or verify requests. The services provided by this unique channel of communication have not only benefited Red Cross operations but military as well.
  - b. National Field Representatives have a working knowledge of all chapters in their respective jurisdictions. This knowledge includes: People, organizations, terrain, roads, needs, resources, and prevalent attitudes.
  - c. In each state, a Red Cross State Relations Officer maintains year-round working relationships with the Governor, his state officials, and various state agencies and organizations.
4. It has never been necessary before in any previous disaster to use so many small planes, most of which were privately-owned or local commercial. In this widely-dispersed operation, it would have been impossible to meet emergency family needs at the time they were required if local planes had not been utilized.
5. The Army and the Red Cross, long associated together, have tightened their cooperative bond in this joint effort. The Commanding General and Mr. Basil O'Connor, President of the American National Red Cross, recognizing this fact, exchanged the following telegrams during the latter part of the operation:

"Mr. Basil O'Connor, President  
The American National Red Cross  
Faust Hotel  
Rockford, Ill.

May I express to you and other officials of the Red Cross, its chapter workers and national staff our appreciation for the splendid and thorough job which the Red Cross has and is continuing to do in meeting emergency human needs in Operation Snowbound. I wish to congratulate you and the organization on your great accomplishments. It is my opinion that the Red Cross should always be strong to meet such responsibilities. The Army and Red Cross work side by side in peace and war. Operation Snowbound is unique to say the least, but even here we are side by side.

Major General Lewis A. Pick"

"Major General Lewis A. Pick  
United States Army Engineers  
Omaha, Nebraska

Many thanks for your thoughtful wire of Feb 11th. From the reports I have received all the forces under your command are performing outstanding and tireless service in the face of tremendous hazards. For the military and the Red Cross to be operating side by side in this emergency again proves that these two forces working together can accomplish tremendous tasks under great obstacles. In behalf of the acutely affected Red Cross chapters and our national organization I extend a warm salute to you and your associates. Regards.

Basil O'Connor"

HEADQUARTERS  
FIFTH ARMY DISASTER FORCE "SNOWBOUND"  
206 South 19th Street  
Omaha, Nebraska

26 February 1949

Rear Admiral J. Cary Jones  
Commandant  
Ninth Naval District  
Great Lakes Naval Training Center  
Chicago, Illinois

My dear Admiral Jones:

Upon the eve of my departure for other duties, I wish to thank the Navy for the equipment which was made available to the Fifth Army Disaster Force "Snowbound", and to express my appreciation for the splendid work done by naval personnel who participated in the operation.

Personnel from Naval Reserve Training Centers in Omaha and Lincoln, Nebraska; Denver, Colorado; and Cheyenne, Wyoming, were utilized to establish and operate radio stations at Ainsworth and North Platte, Nebraska; Rawlins, Wyoming; and Cheyenne, Wyoming, and did outstanding work in establishing and operating communication facilities. The service of this personnel has been marked by devotion to duty and high standards of technical ability. The radio net established by them provided a reliable means of communication and was a substantial contribution to the success of snowbound operations.

I wish to commend particularly the personnel from the Naval Ammunitions Depot at Hastings, Nebraska, for the fine work that they did with depot snow removal equipment in clearing the highways and county roads in the Holdredge-McCook area as an integral part of our Disaster Force "Snowbound".

I congratulate you and the other personnel concerned on a job well done.

Sincerely yours,

LEWIS A. PICK  
Major General, CE  
Commander

HISTORYFIFTH ARMY DISASTER OPERATION"SNOWBOUND"TYPES OF SNOW REMOVAL EQUIPMENT EMPLOYED

<u>Type</u>	<u>General Remarks on Performance</u>
Dozer D-4	Too small for snow conditions encountered on this operation. Satisfactory in some areas where bridge capacities prohibited heavier equipment, and for minor cleanup work.
" D-6	Same as D-4, however 2 machines used together were effective in light snow.
" D-7 (1)	Smallest type the field reported to be effective.
" D-8	Excellent except where bridge capacity limited weight. Low ground pressure made this equipment particularly satisfactory for operating in snow removal.
" HD-7	Too light for the job. Many complaints from the field. See Engineers Appendix.
" HD-10	No specific comment.
" HD-14 (2)	Generally the same as for D-8
" HD-19	No specific comment.
" TD-6	No specific comment. See D-4
" TD-9	No specific comment. See D-4
" TD-14	Only one area reported on this equipment. The comment was favorable due to low ground pressure. Easier to start in cold weather than either AC or Caterpillar. Open track chain is better for snow than either AC or Caterpillar.
" TD-18	Same as TD-14
" TD-24	Same as TD-14
Tourna-Dozer	Limited number employed. Reported to be excellent and fast. Limitations are rough terrain, bridge capacity. Has been reported as clearing as much as 70 miles per day in areas of S. D. where only occasional heavy drifts were met.
Cleveland Tractor (30 and 50 HP)	Same as D-4, except that provision for attaching grousers is desirable in snow and ice operations.

- (1) Army and contractor equipment
- (2) Air Force equipment

<u>Type</u>	<u>General Remarks on Performance</u>
<u>Plows:</u>	
Bros Model, E-H V Plow	No specific comment.
<u>Rotaries:</u>	
Bros Model, Wing Plow	Report from Nebraska Highway Resident Engineer at Neligh, Nebraska enthusiastically endorses this machine. Much faster than any other rotary and can handle higher drifts.
Sno-Go	Excellent performance.
Adams Grader with Bros Rotary	One area reported excellent performance, better speed with this machine, but it failed mechanically when it encountered layers of ice intermixed with snow. It was recommended that heavier blades, shafts and mounts be provided for all rotary plows. It was suggested that power in the Bros should be increased from 90 HP to about 150 HP.
Klauer	These rotaries were mounted on the following vehicles:  FWD Truck Oshkosh Truck Adams (Motor Grader)-See Adams Rotary above International Truck Marmon-Harrington Reo
Snow Twin Rotary (McNeal Mach. Wks., St. James, Minn.)	This equipment was used in northeast Nebraska where snow was rather heavy and some ice had formed. Field reports the machine was fast and excellent performance due to simple design of actual snow cutting attachments.

For more detailed information, see Part II - Observations and Lessons and Engineer Appendix Q.

HISTORYFifth Army Disaster Operation"SNOWBOUND"ENGINEER MAINTENANCE AND SUPPLY OF SPARE PARTSOrganization

The Engineer Section of Headquarters Operation "Snowbound" consisted of one officer and five civilians plus the necessary clerical assistance. One civilian, loaned from the Omaha District, devoted his entire time to the making of local purchases of spare parts and accessories for Caterpillar and Allis Chalmers Tractors. Four Heavy equipment specialists were obtained, two from Granite City Engineer Depot, one from Sunflower Ordnance, Lawrence, Kansas and one from R & U Division, Engineer Section of Fifth Army Headquarters.

Three of the heavy equipment specialists were assigned to the field in areas of high equipment concentrations to assist the Area and Sub-Area Engineers in solving the maintenance problems encountered in Nebraska. One of the heavy equipment specialists who is an Engineer Regional Maintenance Officer from Granite City Engineer Depot, was designated as Maintenance Supervisor, with the mission of contacting and supervising the three men in Nebraska and inspecting equipment and maintenance in Wyoming and South Dakota. (See Annex I for report of Maintenance Supervisor.)

Twenty-one civilian mechanics were employed by Operation "Snowbound" and used throughout the state of Nebraska as the Area Engineers deemed necessary. The distribution of mechanics to Sub-Areas was roughly on a basis of two per ten dozers. Some of these men were utilized in field service crews for minor repairs. In some Sub-Areas, shop space was rented and repairable items were moved into these places for shelter from the severe weather.

Eleven mechanics were employed and sent to Wyoming. Eight of these men were utilized in the AF shops at Fort Francis E. Warren repairing and reconditioning equipment damaged in Operation "Snowbound".

Five Engineer 3-man Maintenance Teams were constituted in the Kansas City Engineer District and dispatched to Neligh, Broken Bow, Valentine, Mullen and Ogallala for utilization of the Sub-Area Engineers.

These Engineer Maintenance Teams were equipped with the following:

- Oxy-Acetylene cutting torch with several cylinders of oxygen and acetylene
- Two salamanders
- Tarpaulins
- One or two drums of diesel oil
- One drum gasoline
- Tools for D-7 and D-8 - No special tools for HD-7
- Lubricating oils and greases
- Blades and end bits
- Panel truck

OperationSpare Parts Procurement

On the first day of operation of the section contact was established with Granite City Engineer Depot, Columbus General Depot and local Caterpillar and Allis Chalmers dealers. The policy was announced that where

possible all parts would be purchased locally to expedite repairs and prevent the necessity for a large supply of spare parts in the disaster area. Where parts could not be obtained in the Sub-Areas they were purchased in Omaha through the Purchasing Section of the Omaha Engineer District. This procedure worked efficiently and the supply of parts was in most cases expeditiously delivered to the field. In some instances urgently needed parts were processed for contractors on a reimbursable basis. In other instances parts were procured, charged to the contractor and delivered by the fastest means to facilitate rapid repair of his equipment.

#### Engineer Equipment Maintenance

Civilian mechanics employed and sent to the field were placed under the direction of the appropriate Sub-Area Engineer. The organization of the civilian personnel for maintenance and the provision of heated space in which to work was a responsibility of the Sub-Area Engineer. The heavy equipment specialists were instructed to give all possible assistance in technical matters and to offer suggestions in the use of personnel and in proper maintenance procedure.

For purposes of control, deadlined equipment was inspected by heavy equipment specialists and recommendations were included in the report concerning disposal. In practically all cases, items of heavy equipment deadlined for major repairs were returned to the base shop, Granite City Engineer Depot, Granite City, Illinois, on orders from Headquarters.

When heavy equipment in a Sub-Area was declared surplus, disposition was ordered from Headquarters. Equipment was ordered to another Sub-Area only if it was in operating condition. Equipment for which no further need was contemplated was given a technical inspection by maintenance personnel and prepared for shipment to Granite City Engineer Depot.

To expedite the dropping of heavy engineer equipment from accountability of Operation "Snowbound", the equipment specialists were instructed to report complete information on all equipment loaded for shipment. From this information it was possible to keep a record of the items of equipment in each Area and Sub-Area.

During the course of the snow fight, the states involved asked that certain items of equipment be left as a residual reserve when the job was closed down, the idea being that equipment would be loaned to the National Guard, and that civilian or National Guard operators would be trained and the equipment used in case of further heavy snowfall. With this equipment, the National Guard could start operations in areas of extreme snowfall to keep the main thoroughfares open and avoid a complete breakdown of routes of communication such as happened prior to the emergency. Department of the Army approved the principle of residual reserve. However, South Dakota and Nebraska decided against a reserve of dozers and requested only nine and twenty-five weasels respectively. The state of Wyoming received thirty D-7 dozers and sixteen weasels which were shipped to points designated by the USP&DO for the state.

#### Remarks

The development of a simplified system of property accounting for use in regard to items of equipment used during disasters would be of great value in reducing necessary administrative work. Confusion resulted because some offices thought that normal accounting procedures were cancelled; while other offices were over careful (to the point of refusing to sign for equipment in their possession) because they felt that parts, tools and even the equipment itself could not be properly cared for under the extreme conditions in the field.

The necessity for an Engineer Maintenance Company is clearly apparent if heavy Engineer equipment is to be used on projects of this nature. Maintenance becomes even more important when this equipment is operated by civilians employed on a temporary basis and without any qualification tests to determine their proficiency.



It is recommended that teams of heavy equipment mechanics and helpers be organized and equipped from existing personnel in Army operated shops throughout the Fifth Army Area, to be available for use in any future emergency.

FIELD OBSERVATIONS OF ENGINEER MAINTENANCE OFFICER

1. Personnel Problems

- a. One area having 16 HD-7 tractors was supplied with 68 enlisted men from 12 different organizations. There were actually three experienced or trained dozer operators; the balance of these men were truck drivers, weasel operators, ambulance drivers, etc.
- b. Men arrived with and without winter clothing and cash.
- c. These operators were not trained in supply procedure and in many instances were completely isolated from their headquarters. In one particular instance, the Engineer Maintenance Officer received a telephone call from the field stating an operator had been in the store and reported that nubbins were off the back wheel. Investigation proved that the machine had run off its track. Other improper parts identification can be imagined.

2. Organizational Problems

- a. Where District Engineers received military equipment and turned the same to the civilian contractor for operation maintenance, there were no particular problems.
- b. It would appear that the most satisfactory organization for the operation of military equipment is a military unit complete with its maintenance echelon. There is no Engineer Maintenance Company in the Fifth Army Area. It is felt that maintenance platoons serving various areas would have been a great value.
- c. Comparison between civilian and military operation insofar as deadlined equipment is concerned can not be made without considering age of equipment, maintenance support and operators. All contractors having more than three machines had their own maintenance equipment and spare parts with them whereas military items were deadlined until parts could be procured and installed. Period of deadline depended upon the availability of the parts and distance to parts supply.

3. Mechanical Problems

- a. Any comparison between machines is made considering that no special snow equipment was provided on any of the military engineer equipment.

(1) Caterpillar Tractors and Dozers

- (a) In temperatures around -30° hydraulic pumps gave considerable trouble until heat was conducted from the exhaust through flexible tubing to the pump housing.
- (b) Hydraulic dozers were found superior in ice conditions because downward pressure could be applied to hold the blade down. It was also possible to use the down pressure to jack the tractor out of a hole.
- (c) Gage shoes and "floating" blades were especially helpful to green operators.
- (d) LeTourneau P.C.U. collected snow and ice inside of the cable guards which locked the brakes. Removal of the guards corrected this situation.

- (e) A plate (part #688729 on a D-7) covers the drain cock on the fuel tank. Operators could not drain water from fuel tank unless this plate was removed. Sufficient to say that tanks were not drained and engines were deadlined by broken fuel transfer pumps caused by ice.
- (f) Snow and ice forming in the tracks..compressed the track tension spring which sometimes allowed the tension bolt (7B9726 on D-7) to be broken by the sprocket. After noticed, this trouble was corrected by cutting off that part of the bolt projecting beyond the nut.
- (g) Taper plug in master track pin lost out of many tractors.
- (h) Many cushion assemblies broke down in the first few hours of operation.
- (i) There were quite a few tractors equipped with zerk fittings instead of buttonhead.

(2) Allis Chalmers Tractors.

- (a) Starting problems: Dead batteries, burned out generators, malfunctioning primers and heaters, frozen starter assemblies and a failure of the operator to understand cold weather operation of these engines deadlined many machines.
- (b) Mechanical design of the back sprocket proved most unsatisfactory in snow and caused damage to track adjusting mechanism, broken sprockets, idlers, bent sprocket shafts, bent track frames, broken pinions, etc.
- (c) Bucyrus Erie Dozers have an angle brace attachment fitting over the track frame. Loose tracks cut off the cap screws which held this support and deadlined the dozer.

(3) TD Series

- (a) These tractors apparently gave the contractors little trouble. Starting was simple and gave the least trouble of any units observed in the field. All of these tractors were operated by civilians.
- (b) Construction of the track link leaves more space for snow to escape through the link than in other models of tractors.

(4) Cleveland Tractor Co.

There were only two of these tractors observed operating. One particular advantage was noticed in the track shoe assembly. These shoes are "built-up" type making it possible to change from a flat plate to an open snow track, in the field.

(5) Rotary Snowplows

These three plows (Snogo Models LTR) performed their work very satisfactorily considering the very limited maintenance service given them in the field, due to lack of qualified operating personnel. An inspection of the following three plows released by one using organization for transfer to another area disclosed:

- (a) Truck engine having broken piston, scoring the cylinder wall of the engine to the extent it was necessary to replace engine with a short engine block assembly in order to make the plow available for immediate use in another disaster area. Addition of anti-freeze to truck and auxiliary engines was necessary.
  - (b) Truck engine valve tappet was broken. (Tappet and valve were replaced). Radiator hose on truck engine leaking. Several spark plugs were not firing. Connecting clevis from hydraulic jack to snowplow was disconnected (used for raising and lowering the plow). Generator for the auxiliary engine was not working, new brushes were installed.
  - (c) Water level in truck engine was low. It was necessary to add 11 qts. of anti-freeze. Generator for the auxiliary engine was unserviceable, replacement of the armature was necessary.
- (6) General Remarks.
- (a) Some tractors received from storage had preservatives in the crank cases. Many others had an accumulation of shellac in the fuel tanks.
  - (b) There was no available published information on operation of engineer equipment under snow conditions.
  - (c) It is recommended that a tow cable be provided with each military engineer tractor because tractors were used as "pushers" instead of "pullers". The use of the bulldozer damaged many power control units. It may be worth consideration, designing a bumper to protect such parts of the tractor.
  - (d) There were no winterization attachments on any of the observed engineer items. The use of engine driven blower heaters was prohibited because it was too difficult to start the small blower engines.
  - (e) Winterization kits for all machines should include protection of the engine from drifting snow (which turns to water) and for the operators. On Caterpillar tractors, snow coming from the track falls on the engine, is melted and water is blown back on the operator. In many instances trousers were frozen solid.
  - (f) Operators used sticks and bars in an attempt to scrape the snow frozen to dozer blades. The use of wax on snowplow blades was not observed.
  - (g) It is recommended that blow torches be provided each engineer tractor operating under these conditions.
  - (h) Headlights mounted on the radiators of tractors were soon broken off by snow coming over the dozer blade.
  - (i) It was reported to the Engineer Maintenance Officer that one D-8 tractor fitted with a large V-type (Balderson) snowplow fitted with side wings made rapid progress through six feet of heavy snow.
  - (j) No rotary wing-type plows were observed nor were any Tourna-dozers.

- (k) Many starting cranks for D-7 dozers were lost. Recommend that pocket be provided for this item.
- (l) Recommend that a box be provided on the tractor for storage of tools, small parts and instruction manual.

HISTORYFifth Army Disaster Operation"SNOWBOUND"

## ORDNANCE

The Ordnance functions in Operation "Snowbound" consisted of normal procedures of supply, issue, field maintenance and accounting during the mobilization and operational phase of the operation. Recapture, inspection and preparation for shipment to points of origin of the major items and the return to Ordnance supply points of spare parts and supplies were the functions in the demobilization phase. Fortunately for the Ordnance Department, the 5th Army Area Ordnance Shops, Offutt Field, Ft. Crook, Nebraska and Camp Carson, Colorado were in close proximity of the snow-bound areas. These facilities were utilized to the limit and both installations furnished supplies, drivers and maintenance personnel. Back up supply support was furnished by airlift, rail and truck from Savanna, Rossford and Lincoln Ordnance Depots. Airlift for weasels, transported in C-82 aircraft was furnished by the Air Force. Some weasels that were transported by air into Nebraska were later transferred by airlift into the North Dakota snowbound area. Operating crews were furnished by Camp Carson, Colorado, Ft. Knox, Kentucky and Ft. Bliss, Texas.

Two TO/E transportation truck companies, one from Ft. Riley, Kansas and one from Ft. Sill, Oklahoma were moved into the area to transport fuel, parts, forage and food. These units proved very beneficial under all operating conditions. Very few vehicles were deadlined and these were removed by Ordnance Mobile Maintenance Teams operating under Area or Sub-Area Engineers. In connection with the trucks, 2½-ton, Sub-Area Engineers assigned one truck with operators for approximately five weasels. Trucks would transport weasels as far forward as road conditions would permit and weasels would then proceed, in pairs, to farms needing emergency supplies. This operation would then be followed by dozers to clear roads for further deployment. In some cases the above trucks transported weasels to the point of origin, thereby saving time, loading and freight expenses. These trucks proved their worth in Operation "Snowbound" the same as they performed in the global war. (See photo attached.) Ten, 3-man Ordnance Maintenance Teams were organized with home station at Ft. Crook, Nebraska and equipped with truck ¾ ton ambulance or truck 2½ ton GMC and wreckers 4 ton. (See photo in Appendix A). The complement of tools and equipment consisted of chains, spare parts, supplies, hand tools, jacks, anti-freeze, clothing, cots and blankets and Coleman stoves with other miscellaneous items necessary to render maintenance support of Ordnance materiel in the field. Resupply for these teams was called in to the Ordnance Shops at Ft. Crook on a prearranged nightly schedule and dispatched the following day by air, truck or rail. Organizational spare parts for the Transportation Companies were supplied through these Ordnance Mobile Maintenance Teams.

During the operational phase that continued after the turn-over to the Army, Ordnance materiel functioned with very little difficulty. No abnormal supply or maintenance problems were presented that were unsolved. General purpose vehicle demand or spare parts supply consisted primarily of axles, steering gears and engines. Weasel demand was for tracks, carburetors, bogie assemblies, solenoids, starters, generators and sealed beam units. The most critical item was the sealed beam unit for the 5½" spotlight. Very little demand was encountered on weasel engine parts with the exception of the engine accessories mentioned above. The only problem on weasel spare parts was in the supply of tracks. No record was received on shipping documents relative the serial number of the vehicle and not until it was received in the field, could a determination be made whether the 15" or 20" track was needed for replacement.

The following is quoted from a technical information report from Rapid City, South Dakota, relative improvised sleds for M-29 Cargo Carriers:

"The following addition to Weasel (M-29 Cargo Carrier) is considered of prime importance in this type of operation. Locally improvised sleds, of the bob sled type, three or four feet wide by five to eight feet long can be made for hauling additional supplies behind weasels on rescue missions. The carrying space in a weasel is limited and the use of sleds will double or triple their capacity.

"This improvisation should be employed only on fairly smooth and level terrain as the carrying or hauling of excessive loads on rough or mountainous terrain imposes too great a load on the lightly constructed tracks. Suggested maximum loads are 1000 pounds on the weasel, and up to 2000\* pounds on the sled for good operation conditions. The loads are proportionately depending on the terrain conditions. However, in operations in this area the sled doubled the load capacity of the weasel under most of the operating conditions encountered."

\*Other reports indicate the maximum should be 1000 lbs.

The demobilization of Ordnance materiel in Operation "Snowbound" was divided in two phases; namely, inspection and evacuation. Technical inspection prior to shipment was accomplished by inspectors of the Ft. Crook Ordnance Maintenance Teams on prescribed WD AGO forms. These forms were forwarded Headquarters, Operation "Snowbound" for evaluation and pricing, with one copy going to the consignee. Ordnance spare parts, both serviceable and recoverable were returned to Ft. Crook for classification and further disposition. All property records were maintained in accordance with existing regulations.

HISTORYFifth Army Disaster Operation"SNOWBOUND"QUARTERMASTER

Quartermaster type supplies required in the disaster area which necessitated coordination from this headquarters were Arctic Type Winter Clothing, Equipage, Petroleum Products, Food and Forage.

Arctic Type Winter Clothing

In order to adequately protect enlisted personnel from the extremely low temperatures encountered while operating cargo carriers (weasels), dozers, open cab trucks and motor transportation over long periods of time, each was equipped with arctic type winter clothing. In many cases personnel came from their home stations completely equipped with winter clothing, but in the main they were provided with this type of clothing through the medium of stocks secured from Camp Carson, Colorado.

For this purpose the following items were furnished by air transport from Camp Carson:

Items	Tk. Co. 377 (134)	Tk. Co. 505 (134)	Ft. Bliss Weasel Operators (54)
Caps, field, pile	134	134	54
Goggles, ski		134	
Inserts, Mitten			54
Mittens	270	268	54
O'coats, parka-type	134	134	54
Shoe pacs, w/insoles	134	133	54
Socks, wool, ski	670	268	88

From the foregoing tabulation it will be noted that no winter trousers were issued by Camp Carson to personnel of Disaster Operation Snowbound, due to a lack of a stock of this item at that station. For operations in the Dakotas where temperatures ran as low as -27 degrees, complete winter equipment should have been available.

Truck Co. No. 505 was provided with goggles while Truck Co. No. 377 and the weasel operators from Ft. Bliss were not. Due to the frequent ground blizzards and driving snow storms which were experienced it is believed to be essential that in operations of this nature all personnel working in the open be provided with goggles or some suitable substitute as a protection against the driving snow.

As an added measure of protection for men working on operations of this nature, it is suggested that a minimum of two pairs of shoe pac inserts and six pairs of woolen ski socks be issued to each man.

It is also suggested that some form of footgear which is less bulky than the shoe pac be developed for drivers of vehicles.



Equipage

In several of the areas in which field forces were operating, adequate housing facilities could not be provided to accommodate this personnel. The American Red Cross was called upon for aid and assistance in furnishing the necessary cots and bedding. These, in turn, were secured through this Headquarters from Offutt Field, Fort Crook, Nebraska and Fort Francis E. Warren, Wyoming.

Diesel Fuel, Gasoline and Lubricating Oils

Operation Snowbound necessitated the utilization not only of a large amount of government owned equipment, but also the rental of many hundreds of privately owned dozers, plows and other types of equipment and transportation. Government owned items included those belonging to the Army, the Navy, the Air Force and Department of the Interior. Privately owned items included those belonging to individuals as well as to commercial concerns. For Government equipment Operation Snowbound provided motor fuels and lubricating oils, while for the operation of privately owned equipment the contractors were required to purchase their own petroleum products. However, upon Operation Snowbound fell the task of insuring that no equipment of any kind was permitted to remain idle due to lack of fuel or lubricating oils.

For the effective operation of all equipment used it was highly essential that adequate stocks of diesel fuel, gasoline and lubricating oils were available where needed, when needed and in quantities needed. Immediate contact was made with the several large petroleum companies operating in the snowbound area to ascertain whether they had ample stocks in storage in the cities and towns from which equipment was to operate and whether additional stocks could speedily be moved into critical areas.

These conferences developed the information that the network of main distributing centers operated by these petroleum companies proved to be very extensive and adequate to meet the needs not only of the cities and towns in which located but also of all the smaller adjoining communities dependent upon these centers for supply.

Throughout the period of operations, with but very few exceptions, the fuel and lubricating supplies were more than sufficient to meet all requirements. The oil companies called on Operation Snowbound in only a few instances, where the available stocks were running low and assistance was needed to insure resupply to distributing centers.

The cases wherein help was requested were as follows:

One where diesel oil and gasoline were needed in a northern Nebraska town due to the fact that all roads were closed to traffic except one leading directly north into South Dakota. State agencies of the petroleum companies are not permitted to operate outside of the particular state assigned to them. In this case it was necessary to contact the petroleum companies' representatives in South Dakota and advise them of the urgent need of fuel in this area and the circumstances which prevented deliveries from sources in Nebraska. With the assurance that the arrangements made met with the approval of the Nebraska dealers, deliveries were effected from a distributing center in South Dakota.

In two cases several cars had been loaded with diesel oil and gasoline and had been turned over to the railroads for shipment. Due to what the carriers considered more pressing needs, the cars were not moved. Appeals were made to Disaster Operation Snowbound for help in moving these cars. By explaining to the proper officials of the carriers the need for these items in the areas involved this headquarters soon effected deliveries.

Several cases were presented where difficulty was encountered in moving road transports to destination due to the narrowness of the single lane for traffic opened by the road equipment. In all such cases it was found that the cut would accommodate the wheels of the road transports but due to their bodies being two feet wider than the cut, no progress could be made. In all such cases small tank trucks were substituted for the large road transports. In the Alliance, Nebraska area this Headquarters was called upon for military type 6x6 trucks to insure the delivery of petroleum products to the operating equipment. A transportation Truck Company was dispatched to this area to fulfill this requirement. This effectively insured delivery in all cases.

Two cases were presented which required moving fuel across state borders in road transport trucks which were not licensed for Interstate Commerce. The petroleum companies depend upon commercial carriers for the movement of all bulk stocks of diesel oil and gasoline over state highways, and in practically no cases do such carriers possess the necessary Interstate Commerce Commission licenses permitting them to move across state lines. Through this headquarters arrangements were made with the Interstate Commerce Commission Field Representatives in Denver, Colorado and Pierre, South Dakota for the granting of temporary permits to the carriers involved. This insured delivery of needed supplies.

#### Food

Food was supplied in emergency cases by order of this Headquarters only when the American Red Cross called upon the Army to supply food. In these cases subsistence stocks were obtained by making arrangements with Offutt Field, Fort Crook, Nebraska, Fort Francis E. Warren, Wyoming and Lowry Field, Colorado.

Limited quantities of field rations Type C, and Class A rations, less perishable items and seasonings, were provided.

#### Forage

While forage was naturally in great demand for the relief of livestock, Disaster Operation Snowbound did not procure any of this class of supplies. Many offers were received from vendors offering their holdings of concentrated livestock foods and hay to the government. Still other calls were received from communities in the Snowbound Area requesting help in procuring stocks of feed to relieve the situation in their respective areas. All such offers and calls were referred to the appropriate local field representative of the Production and Marketing Association, Department of Agriculture located in Manhattan, Kansas; Bozeman, Montana; Lincoln, Nebraska; Fargo, North Dakota; Huron, South Dakota or Casper, Wyoming.

HISTORY

Fifth Army Disaster Operation

"SNOWBOUND"

TRANSPORTATION

ORGANIZATION OF TRANSPORTATION SECTION

The Transportation Section was organized primarily as a Movements Division. At the beginning of the operation, personnel consisted of one Transportation Officer (TC), one Transportation Agent, one Traffic Clerk and one Clerk-Stenographer.

The major branches of the section were organized as follows:

Freight Branch with primary mission of expediting and tracing of all shipments of Government equipment from shipping point to destination and accomplishing the same for contractor equipment when called upon to do so. A sub-branch of the freight branch was charged with the responsibility of maintaining up to the minute information on operating conditions of railroads and highways to insure that shipments would not be delayed because of blocked rail lines or highways.

Passenger Branch with primary mission of issuing all instruments, i.e., transportation requests, orders, etc., and performing all action necessary in furnishing commercial transportation at Government expense to all categories of personnel.

Motor Pool Branch with primary mission of securing and maintaining a pool of Government passenger vehicles for the use of headquarters personnel and visitors in and around the metropolitan area of Omaha.

Light Aviation Branch with primary mission of providing air transportation for individuals and small parties into the disaster area.

The Movements Division, Transportation Section, Hq Fifth Army, served as a clearing house for information and assistance in all phases of the operation.

OPERATIONS

Freight Branch

At the outset of mobilization all shipping points were contacted and requested to notify the Transportation Section of all outgoing shipments of Government equipment, giving car numbers, equipment loaded, date of shipment, routing and destination. Local representatives of rail carriers involved in each shipment were contacted and notified of shipment by car number and requested to expedite through to destination.

Shipments moving into the Nebraska disaster area from shipping points east, northeast and southeast of the disaster area were routed through Council Bluffs and Omaha. The first few shipments were consigned to ultimate destinations in the disaster area. It was found, however, that in several cases rail lines which had been open through to destination of shipment at the time shipment left origin were snowbound by the time cars arrived at Council Bluffs. In these cases, local carrier representatives were contacted and requested to divert cars to other destinations along lines which were open which needed the same equipment. Diversions were directed by phone and confirmed in writing to the carrier

involved. These diversions kept the cars of equipment rolling straight through to destinations where equipment could be used with no delay en route. Since the weather was unpredictable at this time, and rail lines were being opened and closed daily, a plan was devised whereby shipments were consigned to Omaha and as they approached Council Bluffs were diverted at that point to the first railhead west in the disaster area which needed equipment. If all the equipment was needed at that point, it was all unloaded there. If part or none was needed there, the remainder of the shipment was reshipped to the next railhead farther west in the disaster area needing equipment on a commercial bill of lading to be converted to a Government bill of lading at destination. The carriers agreed to put one of their men on the train at Omaha when these shipments came through to effect proper documentation. This procedure was continued until all cars of a particular shipment had been unloaded.

In one instance, arrangements were made with the Union Pacific Railroad whereby a passenger train carrying 24 enlisted weasel operators out of Omaha picked up three flat cars of weasels, loaded three to a flat car, en route to Cheyenne and completed the direct haul of operators and weasels on the same scheduled passenger train into Cheyenne, Wyoming.

As the need arose for snow clearing equipment in new areas, consideration was given to transferring equipment declared surplus in area already cleared. Due to the limited north and south rail facilities in the disaster area (Nebraska, North and South Dakota and Wyoming) it was found more expeditious and economical from a transportation standpoint to secure the needed equipment outside the disaster area. Railway companies advised that normal freight would require eight days transit time from western Nebraska to North Dakota. As this would have caused a considerable delay in commencing operations in North Dakota, a special train was investigated. Details of this investigation follow:

Equipment and operators were needed in the Minot, North Dakota area. A contractor at Lakeside, Nebraska was alerted to move 60 men and 19 flat cars of equipment to Minot, North Dakota by special train. In plotting the routing, it was found that the most expeditious routing would be CB&Q to Sioux City, GN to destination. Rail costs for a special train movement were found to be prohibitive, so equipment and operators were located in Montana and moved via NP on a line haul into the disaster area in North Dakota. The contractor having equipment and men at Lakeside was from Denver, Colorado. His men and equipment would have had to be returned eventually to Denver. The cars which were ordered for the special train movement from Lakeside, Nebraska to the Minot, North Dakota area were utilized to return the contractor's equipment and men direct to Denver. The action taken resulted in a considerable savings in transportation costs to the Government, and equipment was unloaded where needed in the shortest possible time.

Some cars of contractor equipment were found to be loaded too wide to clear snow cuts at some points. These cars had been loaded by the contractor and accepted by local freight agents in good faith. A conference with Omaha carrier representatives resulted in maximum clearance dimensions being furnished to their local freight agents at shipping points so that contractor's equipment could be loaded properly, obviating any delay in reloading.

Arrangements were made with ICC Motor Carriers Bureau, Omaha to allow truck operators and tank transporters not having proper ICC permits to perform interstate hauling on an emergency authorization. Similar arrangements were made with state highway commissions in obtaining permission to move outside and overweight equipment over state roads on an emergency basis.

During the demobilization period, difficulty in getting empty flat cars spotted at one railhead on the C&NW was experienced. C&NW officials

in Omaha explained the delay was due to their sidings being full of westbound freight leaving no place for empties. When the C&NW line was closed, westbound freight shipments were spotted on sidings until the line could be opened. A few lowboy trucks were used in moving contractor equipment out when cars could not be spotted in a reasonable length of time. Lowboy rates were found to be generally considerably higher than rail freight rates.

Upon request from the Supply Section, this headquarters, Government bills of lading for the return of Government equipment to depots were issued in the Transportation Section and forwarded to shipping points. Full instructions were furnished to the shippers in the field as to completion and disposition of bills of lading and size cars to be ordered from their local carrier agents. If there was any undue delay in getting empty cars spotted, the Transportation Section contacted the carrier officials in Omaha and requested special handling to insure delivery of empty cars as soon as possible.

As the work load increased, the Freight Branch was augmented by adding a Transportation Agent and a Transportation Specialist.

#### Passenger Branch

Military and civilian personnel moved into the disaster area smoothly. Rail and airline representatives cooperated to the fullest extent in making space available to the "Snowbound" Headquarters. Personnel reporting into the headquarters for TDY were reassigned to points in the disaster area and shipped out on the first available transportation. Arrangements were made whenever possible to utilize military aircraft and vehicles. When no trips or flights were scheduled, personnel were issued round trip transportation requests when it was known definitely that they would be returning through Omaha. When it appeared that they might return direct to their home stations from points of TDY in the disaster area, one way transportation was furnished. Tickets were picked up by messenger and transportation to railroad stations and airfields at train and flight times was furnished from the Transportation Section.

Qualified clerks were appointed Transportation Agents at each of the Area and Sub-Area headquarters for the purpose of issuing transportation requests to personnel returning to "Snowbound" Headquarters or their home stations as demobilization got under way.

#### Motor Pool Branch

A pool of 15 Government sedans and chauffeurs was secured and operated on shifts around the clock for the first ten days of the operation. After that a new schedule was set up which provided for the bulk of the cars being available for dispatch during the day and two cars available at night until about midnight. Cars and chauffeurs were dispatched on extended trips to the disaster area when necessary for the accomplishment of a particular mission. Credit cards were furnished the drivers when dispatched on trips to the field.

Two light pick-up trucks were kept available day and night on an "on call" basis for pick-up and delivery service in and around Omaha and in the disaster area when necessary. Maintenance of the vehicles in the pool was performed by the Missouri River Division Garage and the Omaha District Garage.

#### Light Aviation Branch

At the beginning of the operation two L-17 aircraft and one L-16 aircraft, pilots and mechanics were assigned. The L-16 was equipped with skis and was used to get into airfields which were snowbound. The L-17s were grounded on 12 February by Headquarters, Fifth Army and were replaced with two L-5 aircraft. These planes were used primarily for reconnaissance flights over the disaster area. It was found that the L-17 was much more practical for this type of work than the L-5 because of additional capacity.

Air Coordination

The Transportation Officer was given the responsibility of coordinating with all sections in scheduling airlifts through the Air Section to insure that all flights and airlifts were utilized to the maximum.

Recapitulation of Transportation Services

- 304 transportation requests issued.
- 635 personnel furnished commercial transportation.
- 274 rail and air reservations secured.
- 343 rail cars traced and expedited.
- 84 Government bills of lading issued covering shipment of 170 pieces of equipment.
- 70 carloads of equipment diverted.
- 15 Government passenger cars dispatched on 1043 trips for a total of 32,583 miles.
- 3 military liaison aircraft dispatched on 18 flights for a total of 6,300 miles.

HISTORYFifth Army Disaster Operation"SNOWBOUND"

## RADIO STATIONS, EQUIPMENT AND PERSONNEL

<u>Call Sign</u>	<u>Location</u>	<u>Equipment</u>	<u>Source of Equipment</u>	<u>Source of Personnel</u>
ADMR	Omaha, Nebraska	1 ea T - 4/FRC	MRD, Engrs.	MRD & Civilian
AEDG	Harlan County Dam, Neb.	1 ea SCR 499	MRD, Engrs.	MRD & Civilian
AEDH	Kansas City, Missouri	1 ea Wildox Elec. Co.	MRD, Engrs.	MRD & Civilian
AEE	Fort Randall, So. Dak.	1 ea BC 325	MRD, Engrs.	MRD & Civilian
WZDS	Bismarck, No. Dak.	1 ea SCR 499 1 ea Motorola FMTR-50	MRD, Engrs.	MRD & Civilian
WZDS-1	Garrison Dam, No. Dak.	1 ea Motorola FMTR-50	MRD, Engrs.	MRD & Civilian
3WN	Area 1, Ainsworth, Neb.	1 ea SCR 499 1 ea SCR 399	Naval Reserve	Naval Reserve
9YG	Sub-Area I, Neligh, Neb.	1 ea SCR 499 4 ea SCR 609	Air Force Army Sig C	MRD Civilian Army Sig Corps
2FS	Sub-Area II, O'Neill, Neb.	1 ea TCS 25	Naval Reserve	Naval Reserve Army Sig Corps Nebr Natl Guard
FRW	Sub-Area VI, Valentine, Neb.	1 ea TCS 25	Naval Reserve	Army Sig Corps
4TB	Area 2, Alliance, Neb.	1 ea SCR 499	Air Force	MRD Civilian Army Sig Corps
6UM	Sub-Area VII, Chadron, Neb.	1 ea AT9	MRD, Engrs.	MRD Civilian Army Sig Corps
MS9	Sub-Area X, Cheyenne, Wyo.	1 ea TBK 1 ea TDE	Naval Reserve	Naval Reserve
NH3	Rawlins, Wyo.	1 ea TBW	Naval Reserve	Naval Reserve
WC6	Gillette, Wyo.	1 ea SCR 499	Naval Reserve	Army Sig Corps
AEDT	Area 3, Pierre, So. Dak.	1 ea SCR 499	MRD, Engrs.	MRD & Civilian

APPENDIX U

<u>Call Sign</u>	<u>Location</u>	<u>Equipment</u>	<u>Source of Equipment</u>	<u>Source of Personnel</u>
7BZ	Area 4, North Platte, Neb.	1 ea TDN	Naval Reserve	Naval Reserve
5QF	Sub-Area III, Broken Bow, Neb.	1 ea SCR 499	MRD, Engrs.	MRD Civilian Army Sig Corps
8SK	Sub-Area V, Mullen, Neb.	1 ea HT 9		Dist Engr Civilian Army Sig Corps



HISTORYFifth Army Disaster Operation"SNOWBOUND"DAILY RADIO TRAFFIC

<u>Date</u>	<u>Messages</u>	<u>Groups</u>
30 Jan	101	6,445
31 Jan	98	6,681
1 Feb	99	4,214
2 Feb	67	3,792
3 Feb	162	7,510
4 Feb	203	9,658
5 Feb	253	10,666
6 Feb	327	13,153
7 Feb	353	26,348
8 Feb	266	22,718
9 Feb	449	31,718
10 Feb	335	18,818
11 Feb	369	22,505
12 Feb	395	22,951
13 Feb	303	19,944
14 Feb	411	19,532
15 Feb	408	20,664
16 Feb	394	31,598
17 Feb	334	17,540
18 Feb	329	19,278
19 Feb	226	19,332
20 Feb	105	9,769
21 Feb	155	6,292
22 Feb	107	7,365
23 Feb	169	11,971
24 Feb	125	7,050
25 Feb	115	5,869
26 Feb	74	2,995
27 Feb	16	370
28 Feb	78	3,797
1 Mar	69	3,621
2 Mar	76	5,737

HISTORYFifth Army Disaster Operation"SNOWBOUND"PERSONNELSOURCES OF PERSONNELSECTION I - DISCUSSION OF PERSONNEL BY SOURCE AT TIME OF OPERATION  
"SNOWBOUND":

Army	807
Navy	16
Air Force	293
National Guard	136
Red Cross (National Personnel only)	18
Civil Service, MRD	959
Contractor	<u>4,008</u>
	6,237

SECTION II - SOURCE OF MILITARY PERSONNEL (Army, Navy and Air Force)  
EMPLOYED DURING OPERATION "SNOWBOUND":A R M YMilitary District of Washington

PID, SSDA

Second Army

Signal Corps Training Center, Ft. Monmouth, New Jersey  
 The Engineer Center, Ft. Belvoir, Virginia  
 167th Signal Photo Co., Ft. George G. Meade, Maryland  
 2128th ASU, Ft. Knox, Kentucky  
 37th Armd. Inf. Bn., Ft. Knox, Kentucky  
 AFF Board No. 2, Ft. Knox, Kentucky  
 70th Heavy Tank Bn., Ft. Knox, Kentucky  
 32nd Medium Tank Bn., Ft. Knox, Kentucky  
 33rd Medium Tank Bn., Ft. Knox, Kentucky  
 54th Armd. Field Artillery Bn., Ft. Knox, Kentucky  
 83rd Meed. Cav. Rcn. Bn., Ft. Knox, Kentucky  
 Combat Command Reserve, Ft. Knox, Kentucky  
 122nd Armd. Ordn. Bn., Ft. Knox, Kentucky  
 3rd Armd. Division, Ft. Knox, Kentucky

Fourth Army

60th AAA AW Bn., Ft. Bliss, Texas  
 450th AAA AW Bn., Ft. Bliss, Texas  
 67th AAA AW Bn., Ft. Bliss, Texas  
 59th AAA AW Bn., Ft. Bliss, Texas  
 35th AAA Brigade, Ft. Bliss, Texas  
 15th AAA AW Bn., Ft. Bliss, Texas  
 502nd AAA Gun Bn., Ft. Bliss, Texas  
 68th AAA Gp., Ft. Bliss, Texas

267th AAA Gp., Ft. Bliss, Texas  
 2nd RKT Bn., Ft. Bliss, Texas  
 4001st ASU, Ft. Bliss, Texas  
 4053rd ASU, Ft. Bliss, Texas  
 4054th ASU, Ft. Bliss, Texas  
 1st Ordn. MM Co., Ft. Bliss, Texas  
 165th AA Opn. Det., Ft. Bliss, Texas

Fifth Army

Hq. Fifth Army, Chicago, Illinois  
 5001st ASU, Chicago, Illinois  
 5252nd ASU, Chicago, Illinois  
 5252nd ASU, East St. Louis, Illinois  
 5256th ASU, Minneapolis, Minnesota  
 5256th ASU, Rochester, Minnesota  
 5251st ASU, Denver, Colorado  
 5308th ASU, Scottsbluff, Nebraska  
 5308th ASU, Omaha, Nebraska  
 14th Inf. RCT, Camp Carson, Colorado  
 21st Engr. Bn., Camp Carson, Colorado  
 537th FA Bn., Camp Carson, Colorado  
 Medical Detachment, Camp Carson, Colorado  
 522nd ASU, Camp Carson, Colorado  
 91st Cav. Ren. Sqdn., Ft. Riley, Kansas  
 31st Ord. HM Co., Ft. Riley, Kansas  
 73rd Engr. Combat Bn., Ft. Riley, Kansas  
 10th Inf. Division, Ft. Riley, Kansas  
 505th Int. Team, Ft. Riley, Kansas  
 85th Inf. Regt., Ft. Riley, Kansas  
~~87th Inf. Regt., Ft. Riley, Kansas~~  
 86th Inf. Regt., Ft. Riley, Kansas  
 Ground General School Center, Ft. Riley, Kansas  
 521st ASU, Ft. Riley, Kansas  
 Command and General Staff College, Ft. Leavenworth, Kansas  
 5025th ASU, Ft. Leavenworth, Kansas  
 MRD, Corps of Engineers  
 Fitzsimmons General Hospital, Denver, Colorado  
 Percy Jones General Hospital, Battle Creek, Michigan  
 Granite City Engineer Depot, Granite City, Illinois  
 5012th ASU, Ft. Sheridan, Illinois  
 728th MP Bn., Ft. Sheridan, Illinois

N A V Y

Ninth Naval District including:

Naval Reserve Training Center, Omaha, Nebraska  
 Naval Reserve Training Center, Lincoln, Nebraska  
 Naval Reserve Training Center, Denver, Colorado  
 Naval Reserve Training Center, Cheyenne, Wyoming  
 Naval Ammunition Depot, Hastings, Nebraska

A I R F O R C E

Tenth Air Force including:

809th Avn. Engr. Bn., 3450th Technical Training Wing,  
 Ft. Warren, Wyoming.  
 Lowry AFB  
 Kearney AFB  
 Weaver AFB  
 La Junta AFB  
 Casper AFB  
 Offutt AFB  
 Marshall AFB  
 Cheyenne AFB

HISTORYFifth Army Disaster Operation"SHOWBOUND"

HEADQUARTERS FIFTH ARMY  
1660 E. Hyde Park Blvd.  
Chicago 15, Illinois

AG 200.6 (ALFGE-A)

SUBJECT: Commendation Ribbons for Participants in Operation Snowbound

TO: Commanding General, Fifth Army Disaster Force Snowbound, c/o  
Missouri River Division, CE, 206 South 19th Street, Omaha 2,  
Nebraska

1. To permit award of the Commendation Ribbon to a limited number of U. S. Army participants in Operation Snowbound, the Department of the Army has temporarily waived the six months service limitation on the award of the ribbon by the Army Commander. Other restrictions imposed by paragraph 8c, AR 600-45, as changed by Changes No. 11, continue to apply. Department of the Army policy does not permit delegation of authority to award this ribbon below this headquarters.

2. It is contemplated that ultimately approximately fourteen awards will be made to enlisted personnel and four to company grade officer personnel. It is not contemplated that awards be made to field grade officers, but outstanding cases may be submitted for consideration at Department of the Army level. Commanders in all areas should be encouraged to submit appropriate recommendations on deserving individuals so all personnel receive equitable consideration.

3. Since criteria governing the award of the Commendation Ribbon are severe, and the number to be awarded is limited, outstanding cases which do not warrant this award may be recognized by certificates and letters described in Department of the Army Memorandum 600-45-3, 18 February 1948, subject: "Certificates and Letters for Services," which was distributed to all Class I installations.

4. Major Dessie A. Mauk, 0441126, AGD, Chief of the AG Awards Branch of this headquarters, is now on duty at your headquarters. He is thoroughly familiar with the normal awards policies of this headquarters and can advise reference to this project.

5. Procedure: The award of the Commendation Ribbon will be made in two phases. Initial awards to one company grade officer and five enlisted personnel will be made on or about 10 February 1949. Remaining awards will be made at a later date.

a. First Phase:

- (1) The Commanding General, Fifth Army Disaster Force Snowbound, will select the recipients for the first phase.
- (2) An Awards Board constituted by this headquarters will visit your headquarters approximately 9 February 1949 to assist in this selection and in the review of appropriate citations.
- (3) A limited number of recommendations should reach your headquarters not later than 9 February 1949.

AG 200.6 (ALFGE-A)

SUBJECT: Commendation Ribbons for Participants in Operation Snowbound

- (4) Presentation of awards to one company grade officer and five enlisted personnel will be made as directed by the Army Commander on 10 February 1949 or as soon thereafter as practicable.
- (5) Subsequent to the presentation, recommendations for the foregoing awards will be processed as indicated in b below.

b. Second Phase:

- (1) Recommendations covering remaining awards will be submitted to this headquarters on WD AGO Form 638.
- (2) Recommendations will be accompanied by proposed citation written in the third person, containing not more than 90 words.
- (3) Presentation will be made at a date to be determined later.
- (4) Final date for submitting recommendations in fifteen days after the conclusion of Operation Snowbound.

6. Publicity concerning award of the Commendation Ribbon will be withheld pending final action on recommendations at this headquarters. News releases will be coordinated by the Information Section, this headquarters.

BY COMMAND OF LIEUTENANT GENERAL CLAIBERLIN:

H. S. THATCHER  
Lt Col, AGD  
Asst Adjutant General

HISTORY

FIFTH ARMY DISASTER OPERATION

"SNOWBOUND"

AWARDS

1. The following awards for outstanding performance of duty have been awarded as of the termination of Operation "Snowbound":

COMMENDATION RIBBON

1st Lt Richard S. Hartline, 027180, Corps of Engineers  
9807th TSU-CE Missouri River Division, Omaha, Nebraska  
Sub-Area II  
Sub-Area Engineer

Sgt 1cl Douglas D. Brannon, RA 17 229 209  
Field Artillery Bn, Camp Carson, Colorado  
Sub-Area VIII  
Weasel Operator

Sgt Kenneth Hill, RA 6 819 107 Medical Corps  
5021 ASU, Fort Riley, Kansas  
Sub-Area VIII  
Medical Aid Man

Corporal John Donnelly, RA 19 300 832 Corps of Engineers  
5025 ASU, Fort Leavenworth, Kansas  
Sub-Area XII  
Dozer Operator

Corporal Melvin Shoemaker, RA 16 215 755 Corps of Engineers  
9843 TSU-CE Granite City Engineer Depot, Granite City, Ill.  
Sub-Area XII  
Dozer Operator

Corporal Robert E. Simmons, RA 18 004 962 Infantry  
14th Infantry Regiment, Camp Carson, Colorado  
Sub-Area V  
Weasel Operator

Private Victor J. Anderson, RA 20 650 249 Infantry  
14th Infantry Regiment, Camp Carson, Colorado  
Area I  
Weasel Operator

MERITORIOUS CIVILIAN SERVICE AWARD

Louis M. Welter, Omaha, Nebraska  
Assistant Area Engineer  
Area 1

Louis Matthews, New Haven, Missouri  
Assistant Area Engineer  
Sub-Area II

Homer V. Sells, Kaycee, Wyoming  
Maintenance Superintendent  
Sub-Area VIII

Thomas B. Tillman, Rawlins, Wyoming  
Assistant Area Engineer  
Sub-Area VIII

Lee R. Crist, Oahe, South Dakota  
Assistant Area Engineer  
Sub-Area XII

Chalmers B. Stokes, Fort Randall, S. D.  
Assistant Area Engineer  
Sub-Area XI

Francis M. Fahy, Pine Island, Minnesota  
Field Supervisor  
Sub-Area IV

Turner S. Hill, Glasgow, Missouri  
Mechanic  
Sub-Area V

CERTIFICATE OF ACHIEVEMENT

Willie Kingsbury, Rapid City, South Dakota  
Sub-Area XII

Ivan H. Bell, Sturgis, South Dakota  
Sub-Area XII

Joe Carriers, Buffalo, South Dakota  
Sub-Area XII

Edd T. Roach, Rapid City, South Dakota  
Sub-Area XII

Earl L. Dorothy, Phillips, South Dakota  
Sub-Area XII

CERTIFICATE OF ACHIEVEMENT (Cont'd)

H. C. Rempfer, Pierre, South Dakota  
State Highway Commission  
Sub-Area XI

Leo A. Ihli, Pierre, South Dakota  
State Highway Commission  
Sub-Area XI

Glenn Collins, White River, South Dakota  
Sub-Area XI

Craig Lavlerud, Burke, South Dakota  
Sub-Area XI

Richard J. Bass, Martin, South Dakota  
Sub-Area XI

Adolph Hohurz, Eagle Butte, South Dakota  
Sub-Area XI

Carlton B. Bailey, St. Paul, Minnesota  
Sub-Area XI

Rollin Coonrad, Sargent, Nebraska  
Supervisor  
Sub-Area III

Leroy L. Wade, Jr., Omaha, Nebraska  
Supervisor  
Sub-Area III

Darrel S. Brown, Cozad, Nebraska  
Sub-Area IV

Darrell E. Enfield, North Platte, Nebraska  
Area 4

Thomas P. Barnes, Lexington, Nebraska  
Sub-Area IV

Roy Sexton, Mullen, Nebraska  
Sub-Area V

H. J. Kohl, Colorado Springs, Colorado  
Sub-Area IX

2. Many additional worthy examples of outstanding performance of duty have been referred to a Review Board for selecting other meritorious cases. Recommendations will be made for additional awards upon submission of the Board's report.



HISTORY

Fifth Army Disaster Operation

"SNOWBOUND"

CASUALTIES

During the course of the operation seven persons were killed:

Military

Sergeant Turner B. Rich RA38303862, 14th Infantry Regiment, Camp Carson, Colorado	Fatally injured about 2200 hours 14 February at Mullen, Nebraska when he fell down stairs and fractured his skull.
---	---

Civilian

Mr. John Huff CAP Pilot Alliance, Nebraska	Killed about 1440 hours 2 February near Alliance, Nebraska when small plane crashed after striking an electric wire during a reconnais- sance flight.
Mr. William O'Brien Observer Alliance, Nebraska	Killed about 1440 hours 2 February near Alliance, Nebraska when small plane crashed after striking an electric wire during a reconnais- sance flight.
Mr. Roy Wade, Age 36 Dozer Operator Dunlap, Nebraska	Killed at approximately 1200 hours 4 February near Chadron, Nebraska while performing maintenance under the blade. Blade fell and he was crushed.
Mr. Vernie Taylor Contractor	Fatally injured in automobile accident near North Platte, Nebraska, 7 February, while en route to work.
Mr. Fred Peterson Farmer Gregory, South Dakota	Fatally injured about 1200 hours 13 February when dozer clearing path on his farm backed up and caught him under tracks.
Mr. James B. Webber Dozer Operator Rice Lake, Wisconsin	Killed at 2130 hours, 18 February near Center, North Dakota when tractor overturned while negoti- ating steep bank on a stream. Tractor was detouring a weak bridge.

## HISTORY

### FIFTH ARMY DISASTER OPERATION

#### "SNOWBOUND"

#### APPENDIX AA

## FISCAL

Army disaster relief operations were financed principally from Flood Control and River and Harbor funds available to the Division Engineer, Corps of Engineers, Missouri River Division, Omaha, Nebraska. While the decision to use such funds was influenced primarily by their availability at scattered locations throughout the disaster area, cognizance was also given to their flexibility of application; to the fact that related basic field accounting procedures therefor were already established and needed only minor adaptations for the emergency; and that personnel were available, or could be trained with a minimum amount of indoctrination, to implement such procedures.

Concurrence in the use of Flood Control and River and Harbor funds was made by fiscal representatives from the office of the Army Comptroller, Washington; Fifth Army; Finance Officer, Omaha; and the Division Engineer.

Expenditures from such civil funds were controlled and accounted for by the District Engineers, Corps of Engineers, located at Kansas City, Omaha, Denver, Garrison and Fort Peck, all under the immediate supervision of the Division Engineer, Missouri River Division.

At the outset of operations, it was recognized that field operations would be required at numerous, remote locations and that the vast majority of the work would be carried on by small equipment contractors. Further, the geographical limits originally established were subject to expansion and provisions therefor were considered in planning the general network of fiscal activities.

In view of the extensive territory to be covered and the type of operations involved, it was imperative that paper work and administrative details be reduced to the absolute minimum consistent with a reasonable safeguarding of Government funds and the prompt and just payment to the participants in the operation. Since heavy equipment operations would account for the greater part of the total expenditures, over-all rates for operating and standby time were established for each type of equipment to be rented in order to place upon the contractor the burden of hiring employees, maintaining the equipment, paying per diem and transportation and purchasing operating supplies. This procedure eliminated a great deal of accounting detail in the central accounting offices and relieved field forces of a greater amount of administrative effort.

In addition, a large amount of Government equipment was employed. To operate that equipment, it became necessary to hire, in addition to available permanent civil service and Army personnel, equipment operators, servicing personnel, foremen and supervisors and to place them in travel status. A survey was made of wages contained in current Department of Labor wage predeterminations, contractors' payrolls and collective bargaining agreements between unions and contractors. The results of a thorough analysis of the information obtained by the survey indicated the prevailing minimum wage rates throughout the state of Nebraska. Since the rates so indicated were, in some localities, less than the current union scale and less than rates being paid by contractors in some instances; and, due to the fact that it would be necessary to procure a large number of union men in order to obtain qualified experienced men on short notice, an international representative of the

Operating Engineers' Unions was contacted. The Union agreed to furnish equipment operators at the rates indicated by the wage survey. With the assurance that adequate manpower would be made available at the prevailing minimum rates, these rates were established as the rates to be paid on Operations Snowbound. Similar procedure was followed in establishing the wage rates for Wyoming, South and North Dakota.

Field operating expenses necessitated local purchases in dozens of small towns and with all types of vendors. Purchases were for standard articles in practically all cases and prices charged therefor were at normal local rates. Wherever practicable verbal quotations were obtained from more than one firm and purchase was made at the lowest price.

To record, process, account, and pay for all field costs, a guide manual was prepared and made available to each field office. Briefly it prescribed the following forms to be used as the basis for establishing fiscal accounts:

- (a) Contractors Equipment Agreement: (This form, considered as the contractor's proposal, listed equipment, over-all rates therefor as standardized by DFS headquarters, and bore the signature of contractor or his representative.) See Annex I.
- (b) Personnel Appointment and Income Tax Data Forms: (Used Civil Service Form 61 and Internal Revenue Form W-4.)
- (c) Field Purchase Receipt: (Used in field purchases. Original copy given to vendor and carbon copy sent to DFS purchase section for preparation of official purchase order.) See Annex II.
- (d) Receiving and Delivery Report: (For certification of time of contractors' plant and for receipt of miscellaneous purchases. Eng Form 403 (Civil), 1 Oct 48, was used.)
- (e) Personnel Time Reports: (Time and Attendance Report, Eng Form 1300a (1 Mar 47) was used for certification of time of Government employees.)

The above forms were processed in the field and then transmitted to one of the central accounting points in Division and District Offices. There, contracts were prepared and attached to the contractor's signed equipment agreement as an acceptance thereof; official purchase orders were written to cover open-market purchases; personnel records and control were established; finance and cost accounts were maintained; and checks written. Accounts were maintained geographically.

In addition to direct expenditures of the types listed above, District Engineers were utilizing permanent civil service personnel, equipment and other civil projects' facilities. Expenditures for such services, equipment, etc., were financed from Flood Control and River and Harbor funds and accounted for as Operation Snowbound expense.

Over 1000 individual contractors and approximately 700 temporary civil service employees were employed at the peak of operations. Because their expenses were increased by virtue of the transitory nature of their work and the seasonal difficulties, and since the greater part of those employed were not financially able to carry on operations without frequent payments, a policy was adopted which permitted weekly payments. In special cases, payments to contractors were made upon a maximum of two hours notice. Payrolls and per diem claims were received, processed and checks drawn therefor within a 24-hour period. Delivery thereof was usually made immediately by Government vehicle.

EQUIPMENT RENTAL AGREEMENT

Division Engineer  
Corps of Engineers  
P. O. Box 1216  
Omaha 1, Nebraska

1949

Dear Sir:

I (we) hereby agree to rent the following described equipment with operating personnel to the United States of America acting by and through the Corps of Engineers for use in emergency snow removing operations at the rates shown below.

<u>Quantity</u>	<u>Item: Complete Description, Capacity, and Identifying Nos.</u>	<u>Total Purchase Cost or Fair Value</u>	<u>Operating</u>	<u>Stand-By</u>
			<u>Rate</u>	<u>Rate</u>
			<u>Per Hour</u>	<u>Per Hour</u>

The operating rental rate will include all costs incidental to the operation of the equipment, including but not limited to wages, insurance, and other overhead costs, fuel, grease, repairs and servicing charges. The operating rental rate will commence when the equipment is put into actual operation and to cease when actual operations are terminated.

If due to severe weather conditions or similar circumstances (not including breakdowns), the equipment cannot be operated at least eight (8) hours in any twenty-four (24) hour period, stand-by rental rates will be paid for that number of hours obtained by subtracting the number of hours actually operated from eight (8) hours.

Movement between sites of operation will be paid for at the operating rental rates, except that the total hours paid for will not exceed eight (8) hours in any twenty four (24) hour period.

Time lost due to minor repairs requiring less than one (1) hour will be paid for as operating time. Time lost due to repairs requiring more than one (1) hour will not be paid for.

It is further understood that formal agreement for the rental of the above described equipment will be entered into as soon as same can be prepared and that I hereby assume full responsibility for the safety of all employees, equipment, and materials, and for any damage or injury done by or to them from any source or cause except accidental damage to plant or equipment which may be caused by the Government.

BY \_\_\_\_\_  
(Lessor)

If Lessor is a corporation indicate State of Incorporation under signature; and if a partner, give full name of all partners.

\_\_\_\_\_  
(Title)

\_\_\_\_\_  
(Address)



FIELD PURCHASE RECEIPT

DEPARTMENT OF THE ARMY  
CORPS OF ENGINEERS  
OMAHA DISTRICT OFFICE  
1709 Jackson Street  
Omaha 2, Nebraska

Requisition No. \_\_\_\_\_  
(To be inserted by Area  
Engineer, Resident Engi-  
neer or Department Head).

Date \_\_\_\_\_

1. Purchased from \_\_\_\_\_  
(Name of Firm)  
\_\_\_\_\_  
(Address)

NOTE: Paragraph 2 must be completed if invoice will be submitted from another address or by a firm other than that shown in paragraph 1.

2. Invoice will be submitted by \_\_\_\_\_  
(Name of Firm)  
\_\_\_\_\_  
(Address)

3. The following items are required for immediate use by the Government Agency named above:

Quantity	Unit	Articles or Services	Unit Price	Total Amount
		(This form is prepared in quadruplicate, one white, one pink and two green copies, with the instructions being on the back of the original, or white, copy and Explanation of Purchase on the back of the other three sheets)		

4. I hereby certify that the articles and/or services enumerated above were purchased and accepted by me under the provisions outlined on the back of Sheet 1 (white copy) and under the conditions indicated on the back of all other copies of this form.

\_\_\_\_\_  
(Signature and Designation of Purchaser)

\_\_\_\_\_  
(Official Station where Purchaser is Employed)

## EXPLANATION OF PURCHASE

The articles and/or services shown on the face hereof were purchased under the following conditions, checked as applicable:

- (a) \_\_\_\_\_ Under Tps. (Procurement Division) or other contract, No. \_\_\_\_\_
- (b) \_\_\_\_\_ Without competition, from the only available source of supply within a reasonable distance and time, or other conditions, did not permit procurement elsewhere, (Explain \_\_\_\_\_).
- (c) \_\_\_\_\_ After solicitation of competitive bids, award made to \_\_\_\_\_ low bidder; to one of \_\_\_\_\_ equally low bidders; or to other than the low bidder for the following reason. (Explain \_\_\_\_\_).
- Other bidders and their quotations referred to in (c) above:

Name and Address of Bidders _____				
Quantity	Articles or Services	←	Prices Quoted	→

The following certification must be executed by the purchaser in every instance where repairs for military motor vehicles are purchased, and such purchase may be made only in emergencies when all the conditions stated in the certification are present:

"I certify that repairs performed were made more than ten (10) miles from a post, camp or station, further operation would have caused additional damage to the vehicle and immediate repairs were necessary to complete travel in accordance with Department of the Army orders.

\_\_\_\_\_  
Signature and Designation of Purchaser

INSTRUCTIONS TO DEALER FROM WHOM PURCHASE IS MADE

1. This form is a field purchase receipt and, when presented by the bearer with identification indicating his connection with the District Engineer Office, 1709 Jackson Street, Omaha, Nebraska, will provide you with written evidence of a transaction for and on behalf of that office. It will further serve to insure completion of the transaction through issuance of a formal purchase order and subsequent processing of your invoice by the Government Agency responsible for procurement of the articles and/or services furnished.

-----

INSTRUCTIONS TO C. OF E. EMPLOYEE MAKING PURCHASE

2. This form is authorized for use by employees of the District Engineer Office (Omaha District) in making purchases, under emergency conditions, for and on behalf of that Government Agency. Issuance of the form should be simultaneous with purchase and acceptance of the articles and/or services from the supplier. It will not be used for purchase of articles and/or services which may be satisfactorily procured in the normal manner by the District Office; for purchase of quantities greater than required to meet the existing need; nor for purchase of any item for other than official use. Complete information, as called for by the form and applicable in the particular case, is essential to correct procurement and use of the form imposes that administrative obligation on the purchaser. (SEE EXPLANATION OF PURCHASE ON BACK OF GREEN AND PINK COPIES OF THIS FORM).

3. The supplier will be furnished adequate identification to establish the purchaser's connection with the Engineer Department and will be properly advised as to the general procedure which should be followed under the conditions applicable in the instant case. (SEE PROCEDURE OUTLINED IN PARAGRAPHS 4 to 7 INCLUSIVE BELOW).

4. IMPORTANT -- Special instructions governing procurement of repairs to motor vehicles.

(a) The Secretary of the Army has assigned responsibility for maintenance of all Department of the Army MILITARY motor vehicles to the Ordnance Department. (Military motor vehicles are those owned under military funds and are readily identified by code numbers painted on the body of each vehicle). More specific instructions on this subject and general procedure to be followed are contained in District Memorandum with which all concerned should familiarize themselves for their own protection.

(b) If purchase involves procurement of repairs, either parts or services to a MILITARY motor vehicle, the supplier should submit an invoice immediately to the Commanding Officer, Ordnance Department O/O District Engineer Office, 1709 Jackson Street, Omaha, Nebraska. (See Paragraph 6, below, for requirements governing preparation of invoice). Issuance of the purchase order and processing of the supplier's invoice in connection with procurement of repairs for military motor vehicles will be accomplished by Ordnance Department.

(c) If purchase involves procurement of repairs for CIVIL motor vehicles, the procedure outlined in Paragraph 5, below, should be followed.

5. Confirming orders will be issued by the Omaha District Office to cover all purchases, (other than those for repairs to military motor vehicles, as provided in Paragraph 4, above), evidenced by Form MRH 292. Accordingly, the supplier should withhold his invoice pending receipt of a confirming purchase order in such instances. Immediately after the Confirmation Order is received, an invoice bearing the order number should be submitted to the District Engineer Office, 1709 Jackson Street, Omaha, Nebraska, where it will be processed for payment. In addition to data required by Paragraph 6, below, invoices of this kind, which will require payment from M & I or other Civil funds, (1) should be itemized; (2) should show quantity and unit price of each article; and (3) if



purchase includes services, the invoice should show the number of hours of labor and unit price per hour.

6. All invoices must; - (1) be submitted in triplicate; (2) be prepared on typewriter or with pen and ink; (3) show place to which delivery was made; (4) show name and official station or party to whom delivery was made; and (5) must bear a certificate worded precisely as follows:

"I certify that the above bill is correct and just; that payment therefor has not been received; that all statutory requirements as to American production and labor standards, and all conditions of purchase applicable to the transaction have been complied with, and that State or local sales taxes are not included in the amounts billed."

In the event reference to State or local sales taxes is inapplicable, that portion of the certificate should be omitted.

7. Distribution of this form (MRH 292) will be made as follows: - Original (white) to supplier of the articles and/or services procured, (pink) copy retained by the individual making purchase, 2 (green) copies forwarded immediately to Area or Project Office or to the Department in District Office where purchaser is employed. The form then serves as a requisition and should be numbered and processed without delay. One (green) copy should be retained by the department having jurisdiction of the employee (purchaser) and the other (green) copy should be forwarded to the District Office (Procurement Branch) for issuance of a confirming order or for such other administrative action as may be required.

HISTORYFifth Army Disaster Operation"SNOWBOUND"MEDICALMEDICAL CARE OF MILITARY PERSONNEL ON DUTY WITH DISASTER OPERATION  
SNOWBOUND

Itemized bills covering charges for civilian medical treatment of Army and Air Force personnel should be mailed to the individuals' assigned station for vouchering. In case of injury, a brief written report should be submitted, indicating how, when and where incurred. Bills for treatment of Navy personnel should be sent to the station of assignment for vouchering.

HOSPITALS AND PHYSICIANS AVAILABLE TO EMPLOYEES OF UNITED STATES  
GOVERNMENT INJURED IN THE PERFORMANCE OF DUTY

The sources from which an injured employee may obtain treatment for his injury under the provisions of the Employees' Compensation Act at the expense of the Government are given in section 9 of the act, reading as follows:

"Sec. 9 (as amended by act of June 26, 1926). That for any injury sustained by an employee while in the performance of duty, whether or not disability has arisen, the United States shall furnish to the employee all services, appliances, and supplies prescribed or recommended by duly qualified physicians which, in the opinion of the Commission, are likely to cure or to give relief or to reduce the degree or the period of disability or to aid in lessening the amount of the monthly compensation. Such services, appliances, and supplies shall be furnished by or upon the order of United States medical officers and hospitals, but where this is not practicable they shall be furnished by or upon the order of private physicians and hospitals designated or approved by the Commission. For the securing of such services, appliances, and supplies the employee may be furnished transportation, and may be paid all expenses incident to the securing of such services, appliances, and supplies which, in the opinion of the Commission, are necessary and reasonable. All such expenses when authorized or approved by the Commission shall be paid from the employees' compensation fund."

It will be noted that treatment at United States hospitals and dispensaries is mandatory where practicable. Where there is no United States hospital or dispensary, then treatment is to be secured from one of the designated physicians in the locality. Mere convenience or personal preference of the injured employee will not be considered sufficient explanation for the selection of private physicians or for designated physicians in those localities where Government hospitals and dispensaries are available.

It is desired to emphasize the character of the services available at the United States marine hospitals. Both the hospital and dispensary services include every medical facility which can be utilized with advantage in each case. Specialists are always available whenever indicated, and a full staff of ophthalmologists, orthopedic surgeons, and neuropsychiatrists, with every facility for examination and diagnosis, are included on each hospital staff.

As the great majority of injuries subject to treatment under the Compensation Act are surgical in nature, the physicians designated are, in most instances, specialists in surgery. In making these designations the Bureau, insofar as possible, has selected well-trained, experienced surgeons with good reputations.

When an injured employee is sent to a marine hospital or Public Health Service dispensary or to a designated physician for treatment, his official superior should give him a request for treatment made out on the Bureau's form (CA-16) entitled "Request for Treatment" or a letter giving all the information called for by the Bureau's form. This request should be dated and signed by the official superior in his official capacity, and all the information called for by the form should be given. This "Request for Treatment" will be the United States medical officer's or the designated physician's authority for treating the case as a beneficiary of the Compensation Act. Without this request the United States medical officer or designated physician has no authority to treat the case, for he will have no means of knowing whether the case is entitled to treatment at the expense of the Government.

In localities where there are neither marine hospitals nor Public Health Service dispensaries nor designated physicians, the injured employee should secure treatment from any competent, well-trained physician available, as provided in Section 2.1 to Section 2.7, inclusive, of the Bureau's Regulations as amended to June 30, 1939.

Attention is particularly invited to the fact that employees are entitled to medical treatment under the Compensation Act only for injuries sustained while in the performance of duty and occupational diseases--i.e., those showing direct causal relationship to the nature and conditions of employee's work. Illness not due directly to the nature or condition of the employee's work and injuries not sustained while in the performance of duty do not entitle the employee to treatment under the act.

The mere fact that disease develops while the employee is in Government service cannot be accepted as sufficient basis for an award of compensation. The common diseases, such as colds, pneumonia, heart disease, tuberculosis, typhoid fever, rheumatism, varicose veins, flat feet, and the like, which may be and usually are due to causes entirely outside of the employment, can very rarely and only under most unusual conditions be the basis of an award under the compensation law.

If there is doubt as to whether the disability of an employee is due to injury sustained in the performance of duty, the official superior should send the employee to a United States medical officer with a "Request for Treatment" on the Bureau's form CA-17. If there is no United States medical officer available, the employee should be sent to a physician designated by the Bureau, with a request on form CA-17, as provided in Section 2.5 of the Bureau's regulations. The official superior should immediately report the case to the Bureau, explaining the circumstances and his reasons for doubt. In most cases the telegraph should be used for this purpose, preferably using night letter. These telegrams may be sent to the Bureau collect. The United States medical officer or designated physician to whom the employee is sent for treatment will in many instances be able to determine for the official superior whether the nature of the disability with which the employee is affected is such that it could have been caused by the nature or condition of work and whether under the circumstances described the injury is one which could be considered to have been sustained in the performance of duty.

Forms may be obtained at any Postoffice upon request to the Postmaster.

MEDICAL FACILITIES

NEBRASKA

Alliance:

Dr. J. S. Broz, Eagle Building  
Dr. G. F. Johnston, 524 Box Butte  
ave.

Auburn: Dr. Edgar Cline

Beatrice:

Dr. H. F. Elisa, 114 South Sixth  
St  
Dr. R. C. Noble, 112 $\frac{1}{2}$  North Sixth  
St

Dr. W. T. Wildhaber, 710 Court St  
Broken Bow: Dr. T. N. Koefoot, Dierks  
Block

Central City: Dr. A. D. Brown, Hord  
Building

Chadron:

Dr. M. B. McDowell, 204 West  
Second St

Dr. C. M. Pierce, 346 Main St

Chappell: Dr. A. C. Colman, 200 Main  
St

Columbus: Dr. F. H. Morrow, 2623 $\frac{1}{2}$   
Thirteenth St

Falls City: Dr. C. L. Hustead, 116  
West Nineteenth St

Fremont: Dr. C. G. Moore, 503 North  
Main St

Gering:

Dr. W. C. Harvey, 1505 Tenth St  
Dr. W. E. Shike, 1524 Tenth St

Grand Island:

Dr. W. J. Arrasmith, 217 $\frac{1}{2}$  North  
Pine St

Dr. E. G. Johnson, 202 West  
Front St South

Dr. A. P. Synhorst, 217 $\frac{1}{2}$  North  
Pine St

Hastings:

Dr. D. W. Kingsley, 413 West  
Third St

Dr. A. A. Smith, 701 West  
Second St

Dr. J. E. Uridil, 418 North  
Hastings

Dr. C. R. Weber, 612 West Sixth  
St

Holdrege: Dr. F. A. Brewster, 414  
East Ave

Lincoln:

Dr. E. B. Brooks, 128 North  
Thirteenth St

Dr. Clarence Emerson, 1700  
South Twenty-fourth St

Dr. H. H. Everett, 1243 N. St

Dr. J. B. M. Thomson, 1307 N. St

Dr. J. S. Welch, 128 North Thir-  
teenth St

Mitchell: Dr. C. R. Watson

Nebraska City:

Dr. W. S. Ramacciotti, 105 North  
Tenth St

Dr. T. L. Weekes, 108 North  
Tenth St

Norfolk: Dr. E. L. Brush, 409 $\frac{1}{2}$   
Norfolk Ave

North Platte:

Dr. T. D. Dent, 112 Dewey St

Dr. C. F. Heider, 516 $\frac{1}{2}$  Dewey St

Dr. L. F. Valentine, 222 North  
Jeffers

Omaha:

Dr. H. T. Allingham, 4823 South  
Twenty-fourth St

Dr. A. J. Brown, 17th and  
Dodge Sts

Dr. J. H. Christlief, 4702 $\frac{1}{2}$   
South Twenty-fourth St

Dr. E. A. Connolly, 107 South  
Seventeenth St

Dr. J. B. Courtney, 730 City  
National Bank Building

Dr. G. J. Kadavy, 2703 South  
Sixteenth St

Dr. J. F. Langdon, 1341 Medical  
Arts Building

Dr. R. B. Marble, 1603 Farnam  
St

Dr. Clarence Rubendall, 107  
South Seventeenth St

Dr. R. D. Schrock, 107 South  
Seventeenth St

Ord: Dr. C. J. Miller, Ord  
Hospital

Scottsbluff:

Dr. L. E. Hudgel, 1818 Broadway

Dr. W. H. Rasmussen, 15 East  
Eighteenth St

Dr. T. E. Riddell, 15 East  
Eighteenth St

Dr. J. H. Stoops, 2402 Broadway

Sidney: Dr. R. E. Roche

MEDICAL FACILITIES

NORTH DAKOTA

Bismarck:

Dr. C. A. Arneson, 400 $\frac{1}{2}$  Main St  
Dr. N. O. Ramstad, 221 Fifth St  
Dr. R. H. Waldschmidt, 221 Fifth St

Bottineau:

Dr. J. A. Johnson, Main St  
Dr. Kenneth Malvey

Devils Lake:

Dr. G. F. Drew, Locke Block  
Dr. G. J. McIntosh, Baird Block

Dr. G. W. Toomey, Mann Block

Dickinson: Dr. A. P. Nachtwey

Enderlin: Dr. Gilbert Hendrickson

Fargo:

Dr. P. H. Burton, 702 First Ave, South  
Dr. K. E. Darrow, 702 First Ave, South  
Dr. H. J. Fortin, 114 Broadway  
Dr. J. C. Swanson, 114 Broadway

Grand Forks:

Dr. K. E. Fritzell, 122 South Fourth St  
Dr. R. E. Leigh, 111 North Fifth St  
Dr. W. H. Witherstine, 2 North Third St

Jamestown:

Dr. P. G. Arzt, Clinic Drug Building  
Dr. W. A. Gerrish, 213 $\frac{1}{2}$  First Ave, North  
Dr. Joseph Sorkness, 205 $\frac{1}{2}$  First Ave, South  
Dr. W. W. Wood, 213 $\frac{1}{2}$  First Ave, North

Mandan: Dr. G. H. Spielman, 107 First Ave, Northwest

Oakes: Dr. H. J. Meunier

Stanley: Dr. M. G. Flath

SOUTH DAKOTA

Aberdeen:

Dr. H. I. King, 203 Western Union Building  
Dr. T. P. Ranney, 202 South Main St

Belle Fourche: Dr. J. L. Chassel, 506 State St

Brookings:

Dr. Magni Davidson, 402 Main Ave  
Dr. G. H. Gulbrandsen, Medical Block

Deadwood: Dr. M. O. Pemberton

Garretson: Dr. F. C. DeVall, DeVall Hospital

Hill City: Dr. E. B. Hultz

Hot Springs: Dr. J. M. Butler, 609 Eighth St

Huron:

Dr. J. C. Shirley, 450 Dakota Ave, South

Dr. J. S. Tschetter, 546 Dakota Ave, South

Lead: Dr. A. S. Jackson, 502 Julius St

Mitchell:

Dr. W. R. Ball, 203 North Main St  
Dr. C. S. Bobb, 203 North Main St

Newell: Dr. O. H. Clark, Newell Hospital

Pierre: Dr. T. F. Riggs, Pierre Clinic

Rapid City:

Dr. R. E. Jernstrom, 619 $\frac{1}{2}$  Main St  
Dr. N. T. Owen, 704 St. Joe St  
Dr. F. R. Williams, 728 Columbus Ave

Sioux Falls:

Dr. M. O. Lanam, 205 $\frac{1}{2}$  South Phillips  
Dr. C. J. McDonald, 303 South Minnesota Ave

Watertown:

Dr. H. J. Bartron, 201 South Maple St

Dr. H. T. Kenney, 6 $\frac{1}{2}$  South Broadway

White River: Dr. F. E. Bouza

Yankton: Dr. S. M. Hohf, Clinic Bldg

MEDICAL FACILITIES

WYOMING

Afton:

Dr. O. L. Treloar

Dr. S. H. Worthon

Buffalo: Dr. John Hynds, Baker  
Building

Casper:

Dr. Lawrence Barrett, 206 East  
Second St

Dr. G. O. Beach, 206 East Second  
St

Dr. G. W. Henderson, 202 East  
Second St

Dr. Allan McLellan, 206 East  
Second St

Dr. N. E. Morad, 137 South  
Wolcott St

Dr. R. H. Reeve, 206 East Second  
St

Dr. T. J. Riach, 210 East Second  
St

Dr. H. E. Stuckenhoff, 206 East  
Second St

Lander:

Dr. P. R. Holtz, Orchard Block

Dr. J. F. Replogle, 786 S. Third

Dr. W. F. Smith, Baldwin Block

Dr. L. W. Wilmoth, 331 Main St

Laramie:

Dr. E. W. DeKay, 318 Second St

Dr. J. P. Markley, 208 Grand Ave

Dr. C. G. Pugh, 208 Grand Ave

Dr. L. W. Storey, 318 S. Second  
St

Riverton: Dr. J. G. Cogswell,  
Masonic Temple Building

Cheyenne:

Dr. K. L. McShane, 1720 Carey  
Ave

Dr. W. K. Mylar, 2520 Capitol  
Ave

Dr. J. D. Shingle, 2029 Carey  
Ave

Cody:

Dr. V. R. Dacken, 1287 Sheridan  
Ave

Dr. E. C. Ridgway, 1301 Rumsey  
Ave

Douglas:

Dr. E. W. Gardner, 313 East  
Center St

Dr. J. R. Hylton, 315 Center  
St

Greybull: Dr. S. L. Myre, Clinic  
Building

Kemmerer: Dr. J. R. Newnam, 821  
Pine Ave

Saratoga: Dr. R. A. Corbett

Sheridan:

Dr. J. E. Carr, 49 N. Main St

Dr. W. F. Schunk, 105 S. Main  
St

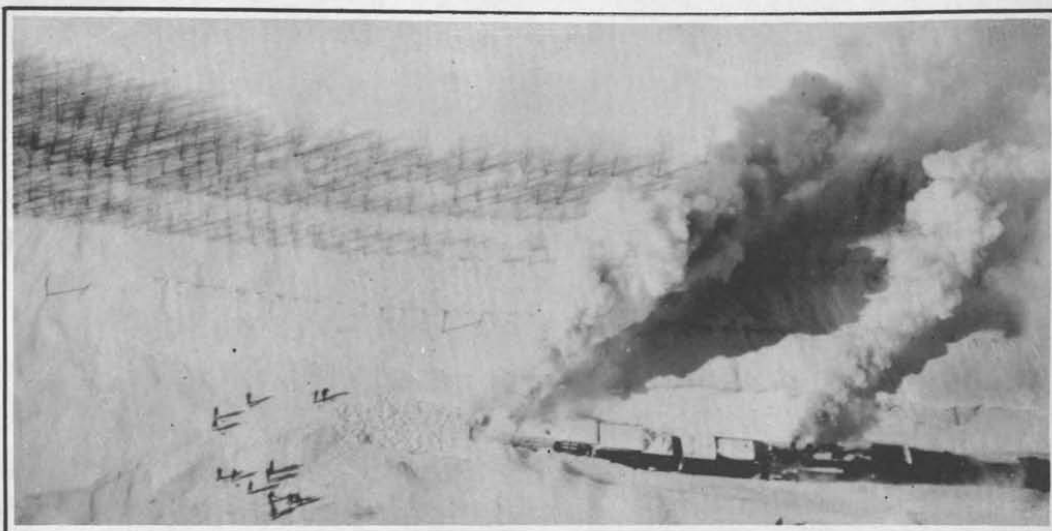
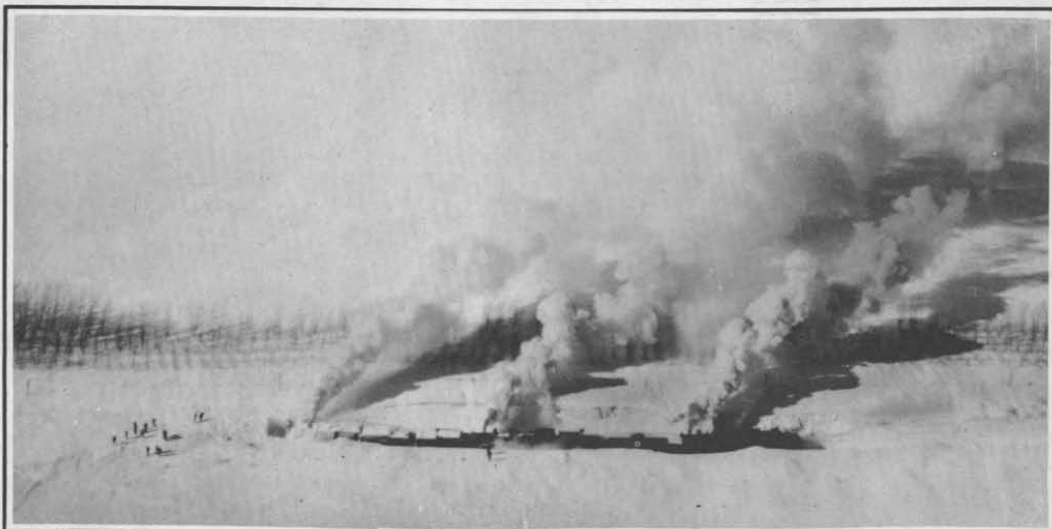
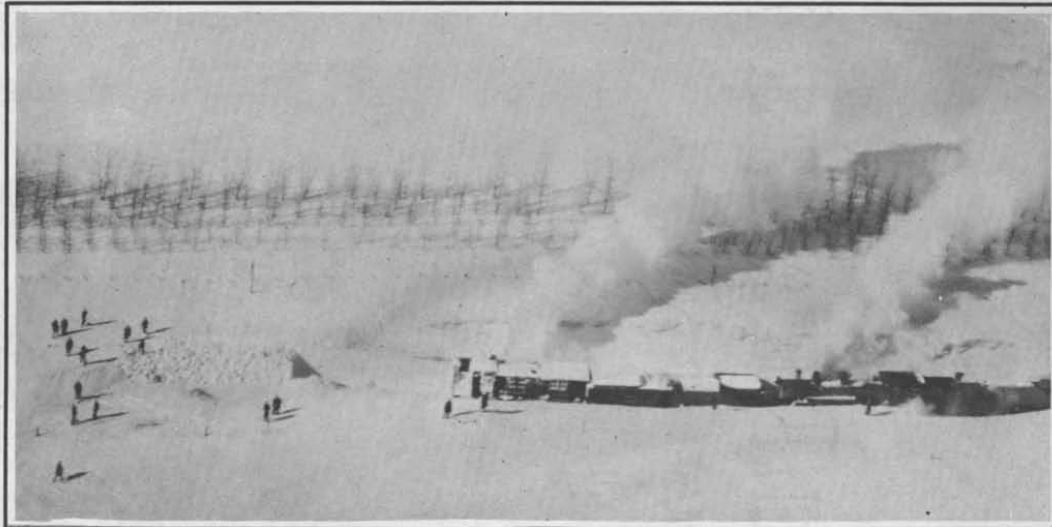
Dr. O. L. Veach, Whitney Trust  
Building

Sundance: Dr. J. F. Clarenbach

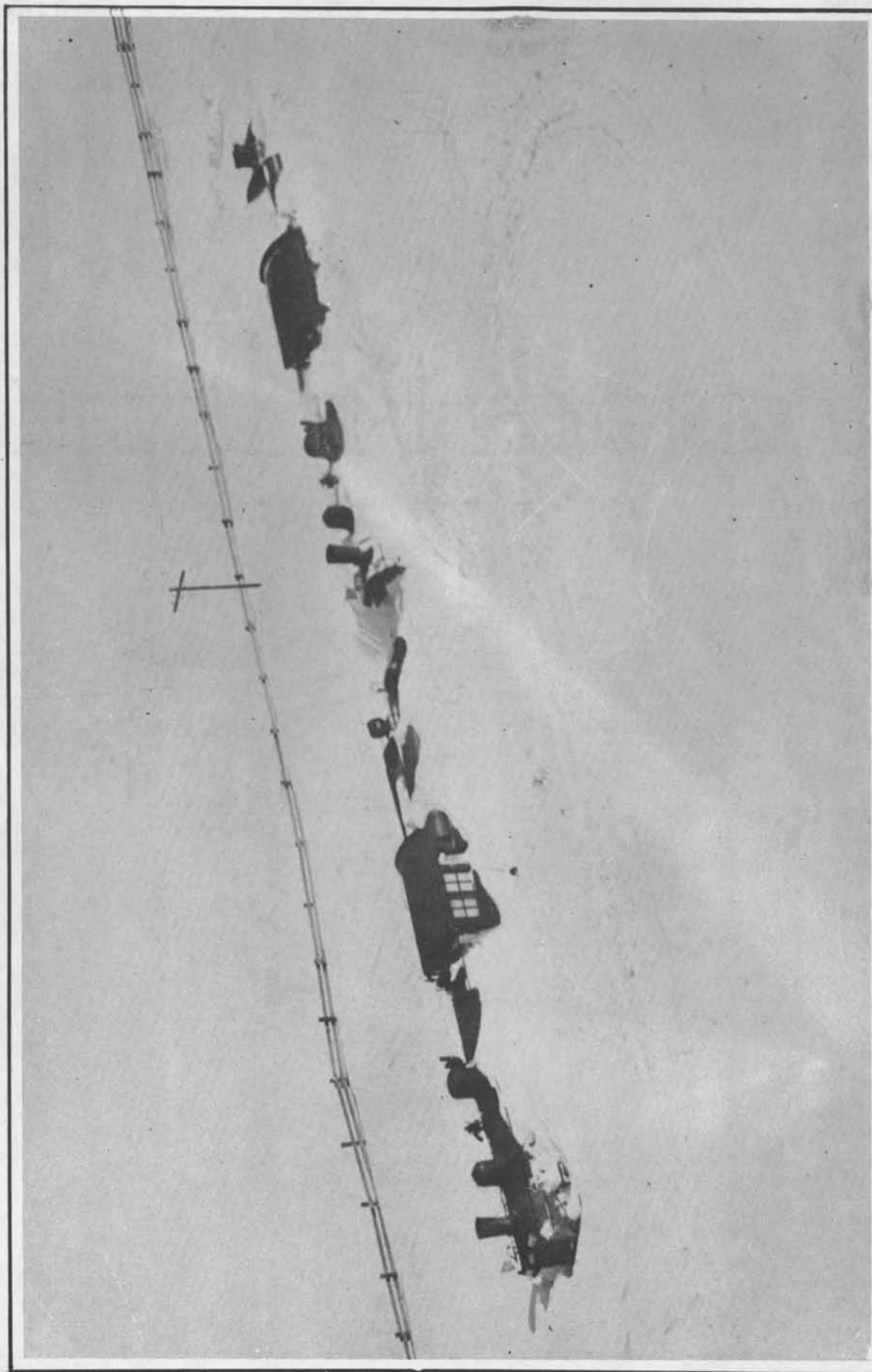
Torrington:

Dr. J. H. Havelly, 236 East Nine-  
teenth Ave

Dr. O. C. Reed, 125 East  
Twentieth St



OFFICIAL U. S. AIR FORCE PHOTOGRAPH SHOWING ICE BEING BLASTED FROM PATH OF LOCOMOTIVES ON THE C.B. & Q. RAIL LINE THREE MILES WEST OF MCLEAN, NEBRASKA. PHOTOGRAPHY BY 15TH TACTICAL RECONNAISSANCE SQUADRON, POPE AIR FORCE BASE, NORTH CAROLINA.



TWO LOCOMOTIVES THAT TRIED TO OPEN A BURLINGTON RAILROAD LINE NEAR O'NEILL, NEBR.

Photograph by Chicago Sun Times





THREE-MAN ORDNANCE MAINTENANCE TEAM, FROM FIFTH ARMY AREA ORDNANCE SHOP AT FORT CROOK, NEBRASKA, TO BE USED IN OPERATIONS SNOWBOUND. VEHICLES, TOOLS AND EQUIPMENT ARE FOR MOBILE FIELD MAINTENANCE OPERATIONS.



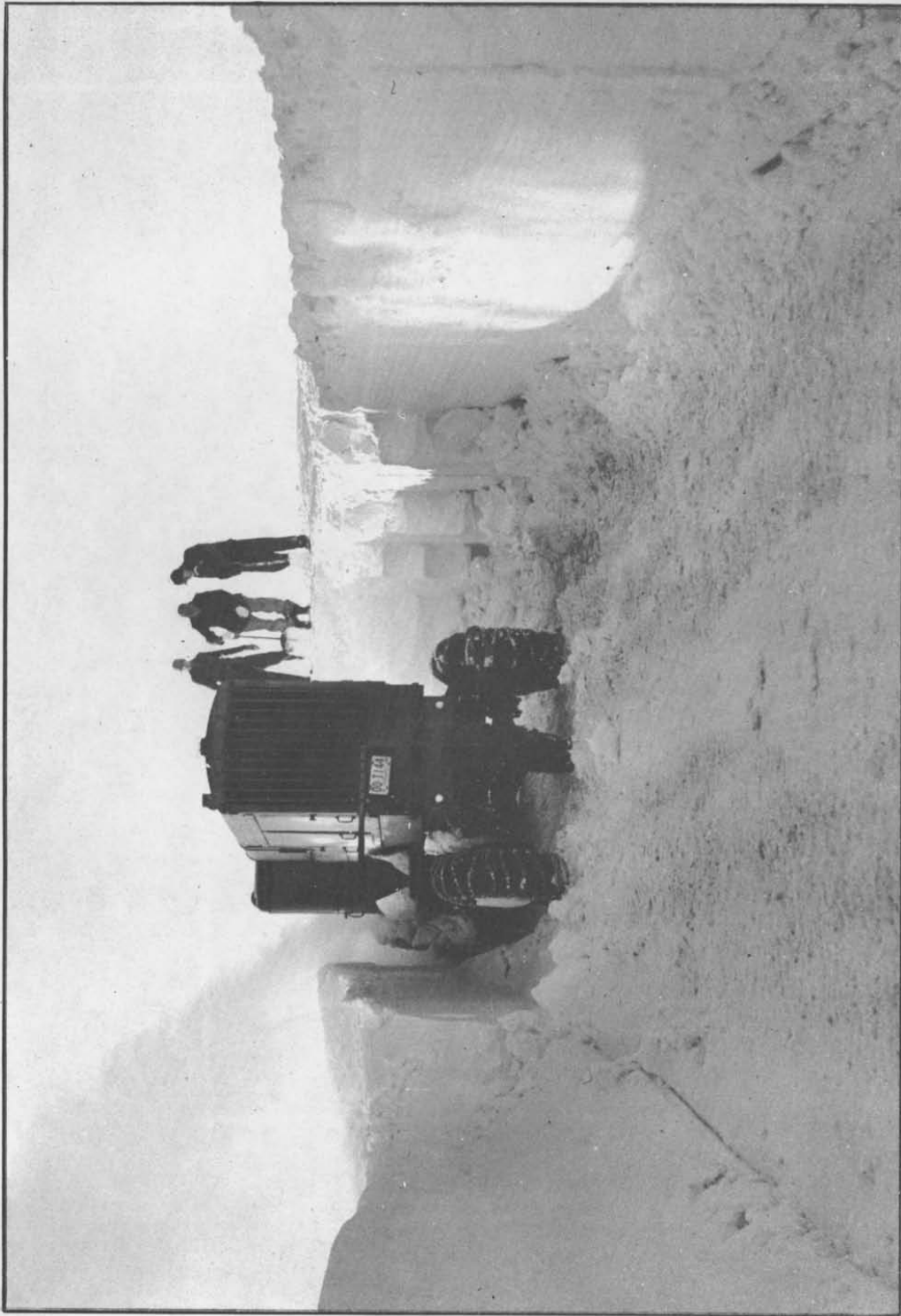
ARMY ROTARY PLOW WORKING ON HIGHWAY 92, CLEARING ROAD FROM LOUP CITY TO BARTLETT, NEBRASKA.



LEROY KUHN, SIDNEY, IOWA, SHOWN CLEARING  
HIGHWAY 108, THREE MILES EAST OF O'NEILL,  
NEBRASKA.



HUNGRY CATTLE BREAK OUT OF CORRAL AT CARL  
BELZER HOME TO GET AT HAY BROUGHT IN BY TWO  
WEASELS FROM O'NEILL, NEBRASKA, TEN MILES  
AWAY.



OMAHA WORLD HERALD-PHOTO



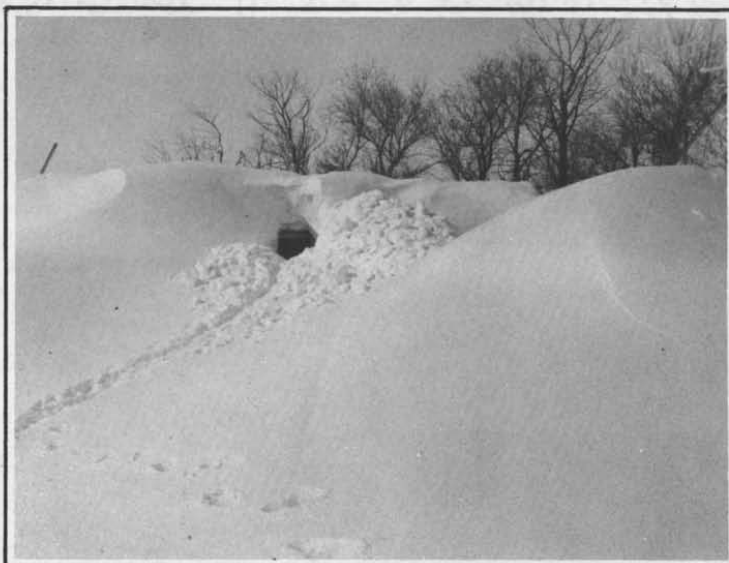
OMAHA WORLD HERALD-PHOTO



OMAHA WORLD HERALD-PHOTO



MR. HAROLD GATES OF HQ. OPERATIONS SNOWBOUND,  
POINTS OUT A HUGE SNOWDRIFT NEAR MR. WILFRED  
NEUGEBAUER'S BARN, 10 MILES NORTH OF MINOT, N.D.  
ON HIGHWAY 83.



A HUGE DRIFT COVERS A LARGE CHICKEN HOUSE ON MR.  
WILFRED NEUGEBAUER'S FARM NORTH OF MINOT ON HIGHWAY  
83. THE COMPLETELY COVERED CHICKEN HOUSE IS 40 FEET  
LONG, 14 FEET WIDE AND 12 FEET HIGH, AND IS HOUSING  
APPROXIMATELY 150 CHICKENS.

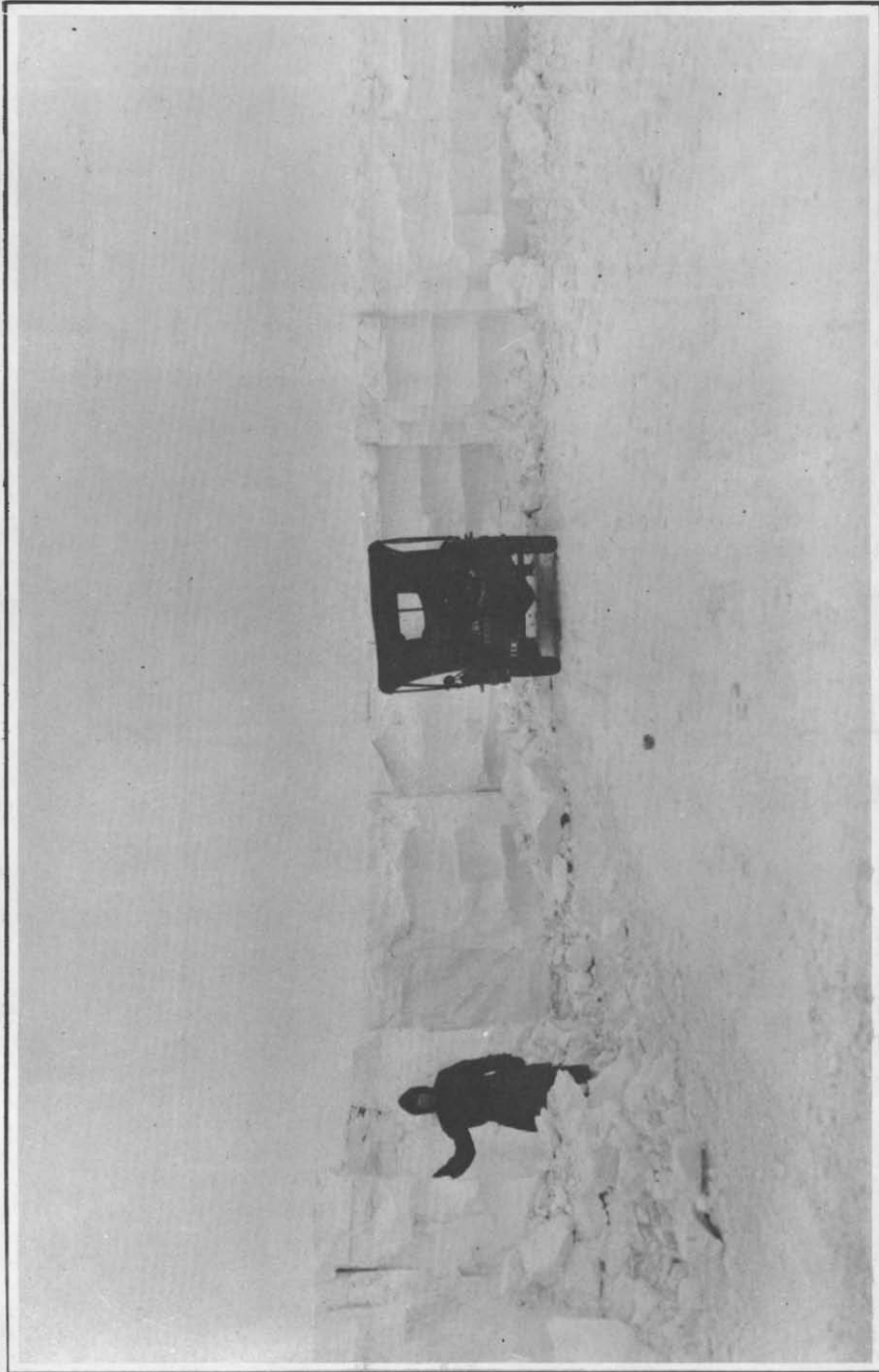




AN ARMY WEASEL IS SHOWN BEING LOADED ONTO A FLAT  
BED TRUCK FOR A TRIP TO ANOTHER EMERGENCY AREA  
NEAR THE ROSEBUD INDIAN RESERVATION, SOUTH  
DAKOTA.



SNOWBOUND RESIDENCE IN THE SOUTHWESTERN PART OF  
RAWLINS, WYOMING.



SNOWDRIFT ON HIGHWAY 287, TWO MILES NORTH OF RAWLINS, WYO. THE HARD-PACKED SNOW MARKS THE END OF THE ROAD FOR THE OPERATION SNOWBOUND ROTARY FLOW. LT. COL. BENJAMIN R. BUSH, COMMANDING OFFICER OF THE 809th ENGR, AVN. BN AT FORT WARREN, WYO. AND HIS JEEP DEPICT THE DEPTH OF THE DRIFT.





CAPTAIN TANSKI INTERVIEWS CARL BELZER TEN MILES EAST OF O'NEILL, NEBRASKA, REGARDING CONDITION OF NEIGHBORS ISOLATED SEVERAL WEEKS.



ROTARY SNOWPLOW IS SHOWN CLEARING HIGHWAY 212, JUST OUTSIDE OF FAITH, S. D.



PRIVATE THOMPSON LOADS BALED HAY ON WEASEL-SLED  
FOR DELIVERY TO HOME TEN MILES EAST OF O'NEILL,  
NEBRASKA.



ARMY BULLDOZER IS SHOWN CLEARING DRIFTS FROM  
HIGHWAY ONE AND ONE-HALF MILES NORTHWEST OF  
ALLEN, S. D.



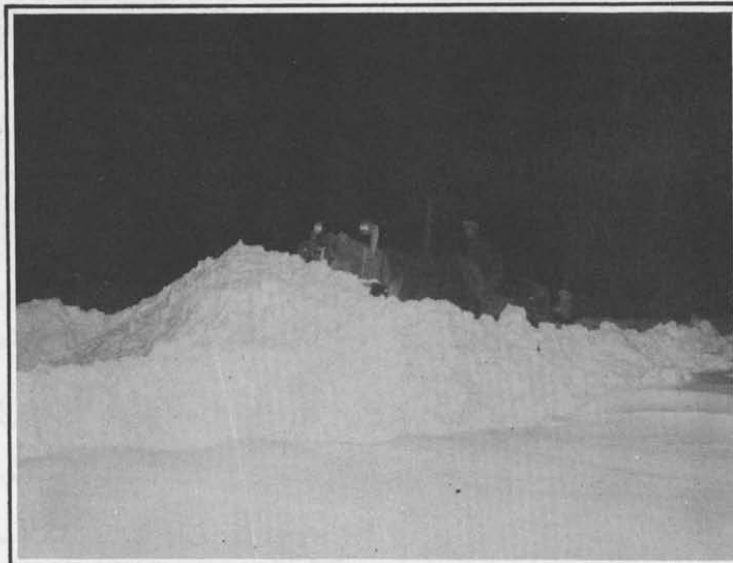
CAR DRIFTED IN AT CITIES SERVICE STATION ONE MILE EAST OF LONE TREE, N.D., ON HIGHWAY 2.



TEAM OF DOZERS OF THE MINNEAPOLIS EXCAVATING & EQUIPMENT CO. COMPLETING CLEARANCE OF A STRETCH OF HIGHWAY 83 NORTH OF MINOT, N.D.



TWO ARMY BULLDOZERS CLEARING DRIFTS FROM HIGHWAY  
TWO MILES WEST OF CONATA, SOUTH DAKOTA.



LEROY KUHN, SIDNEY, IOWA, SHOWN CLEARING A DRIFT  
ON HIGHWAY 108, EIGHT MILES EAST OF O'NEILL AT  
10:00 PM, EIGHT DEGREES BELOW ZERO.

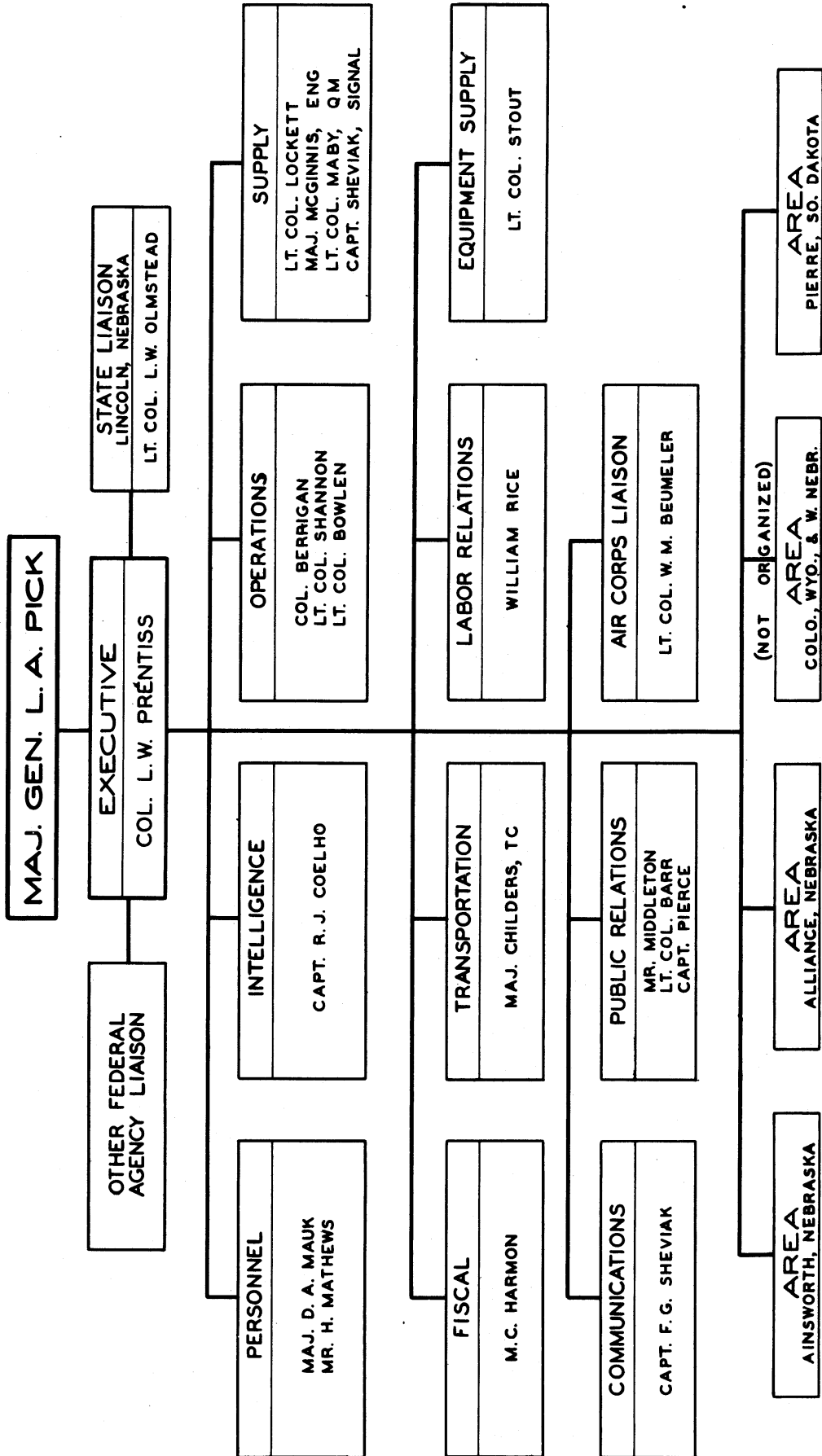


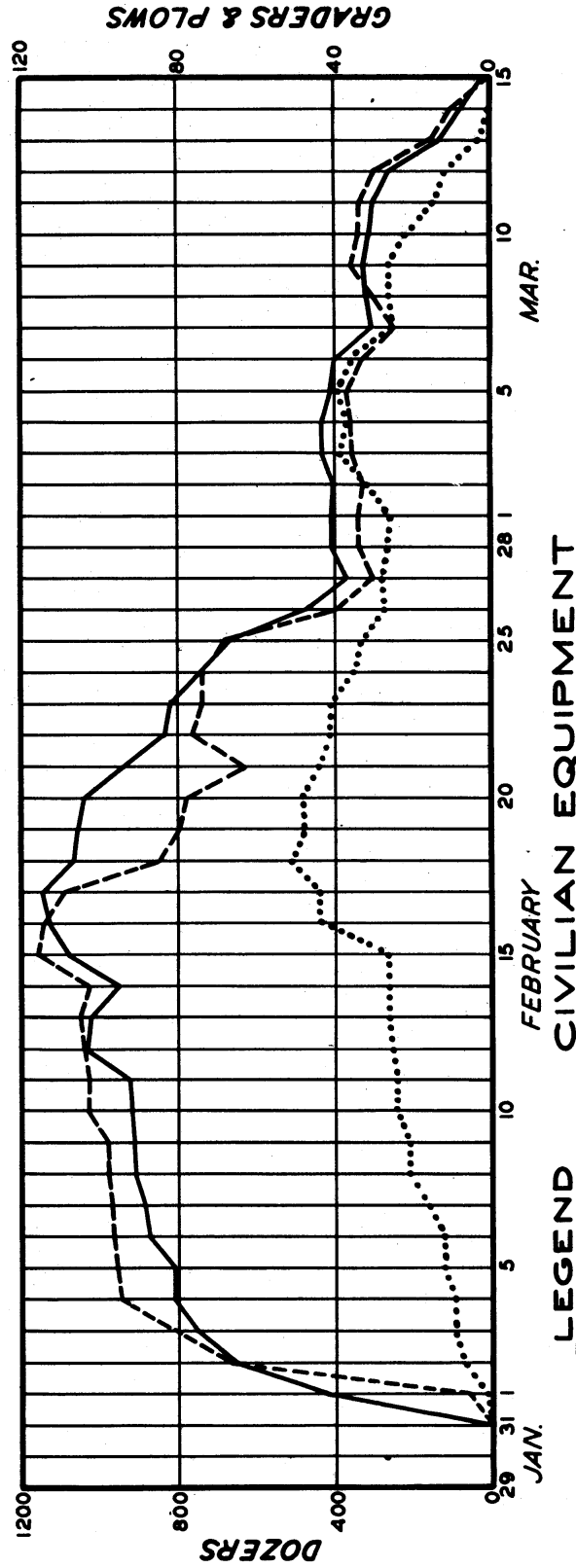
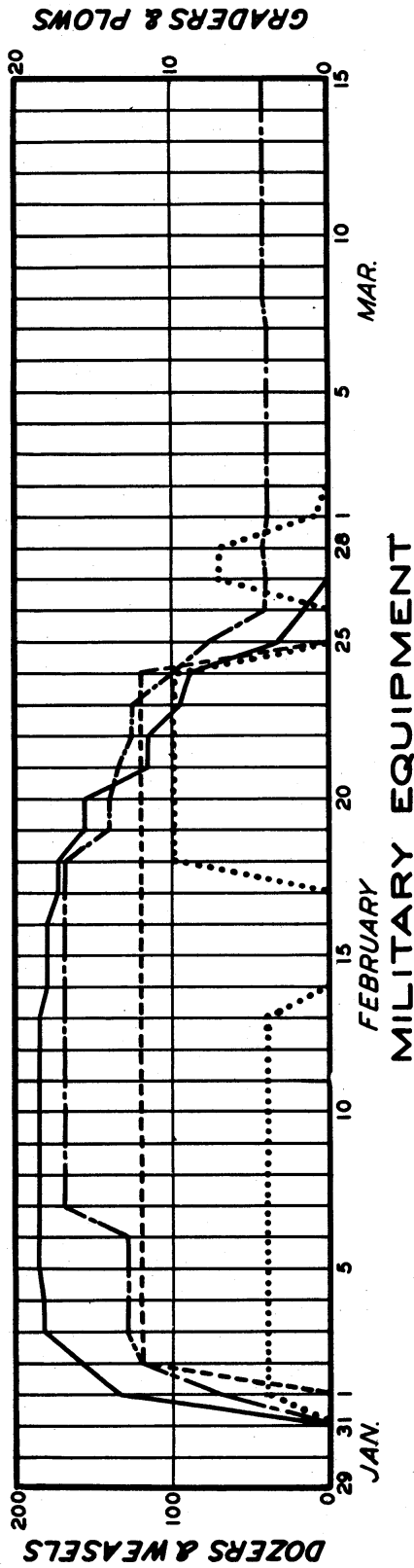
CORRECT METHOD  
SNOW BANKS WHICH TEND TO LESS DRIFTING



INCORRECT METHOD  
STEEP VERTICAL BANKS AND NARROW ROADWAY TEND TO DRIFT

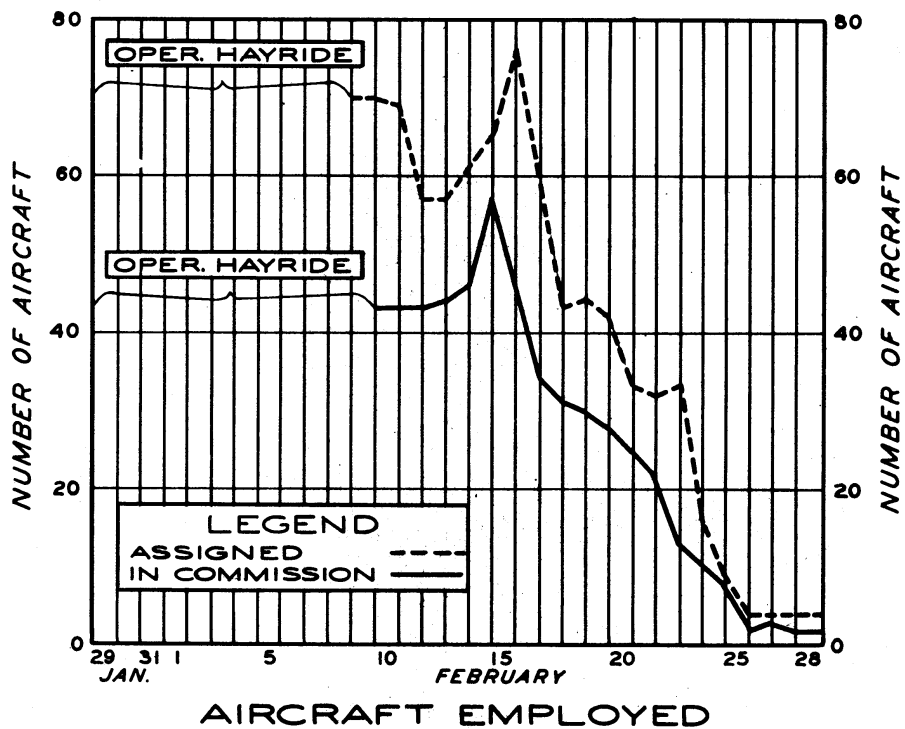
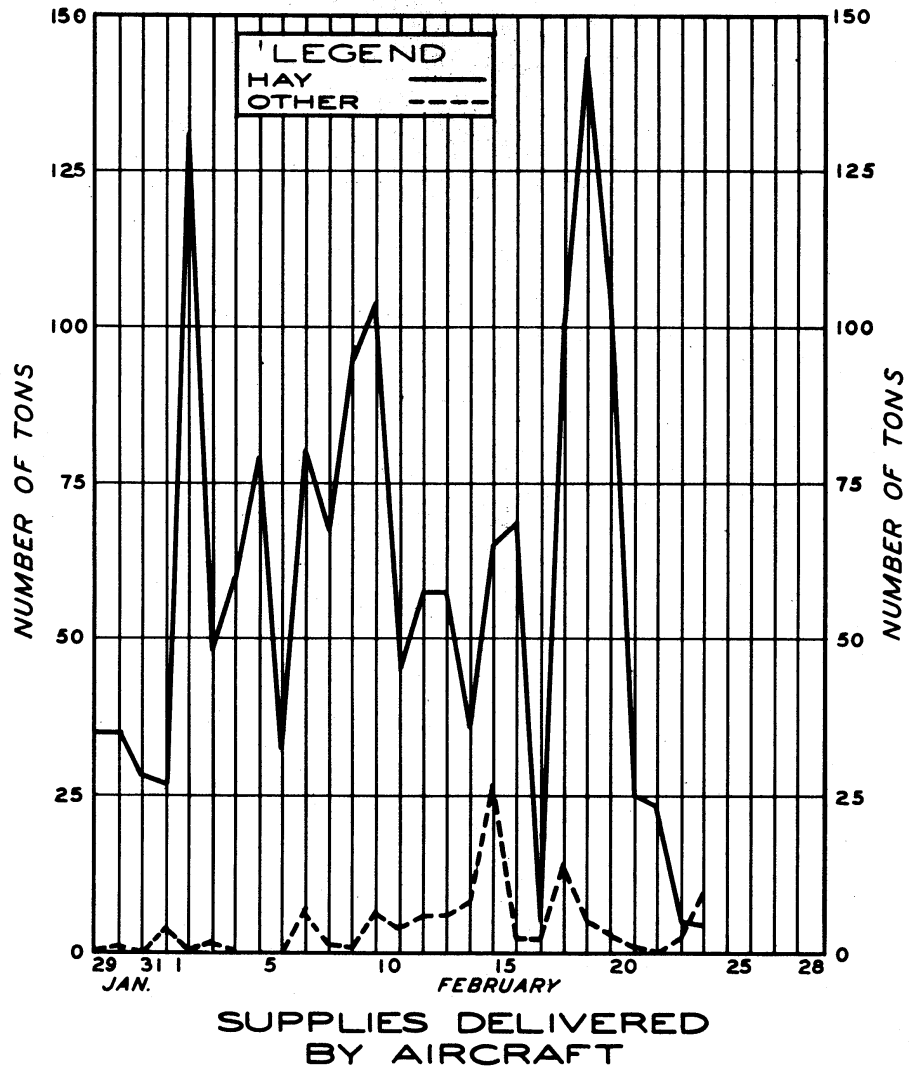
# ORIGINAL ORGANIZATION





**LEGEND**

DOZERS ———  
 WEASELS ———  
 GRADERS - - - - -  
 PLOWS .....  
EQUIPMENT EMPLOYED





# LEGEND

□ PERMANENT STATIONS OF THE MISSOURI RIVER DIVISION  
(C. OF E) FLOOD CONTROL RADIO SYSTEM

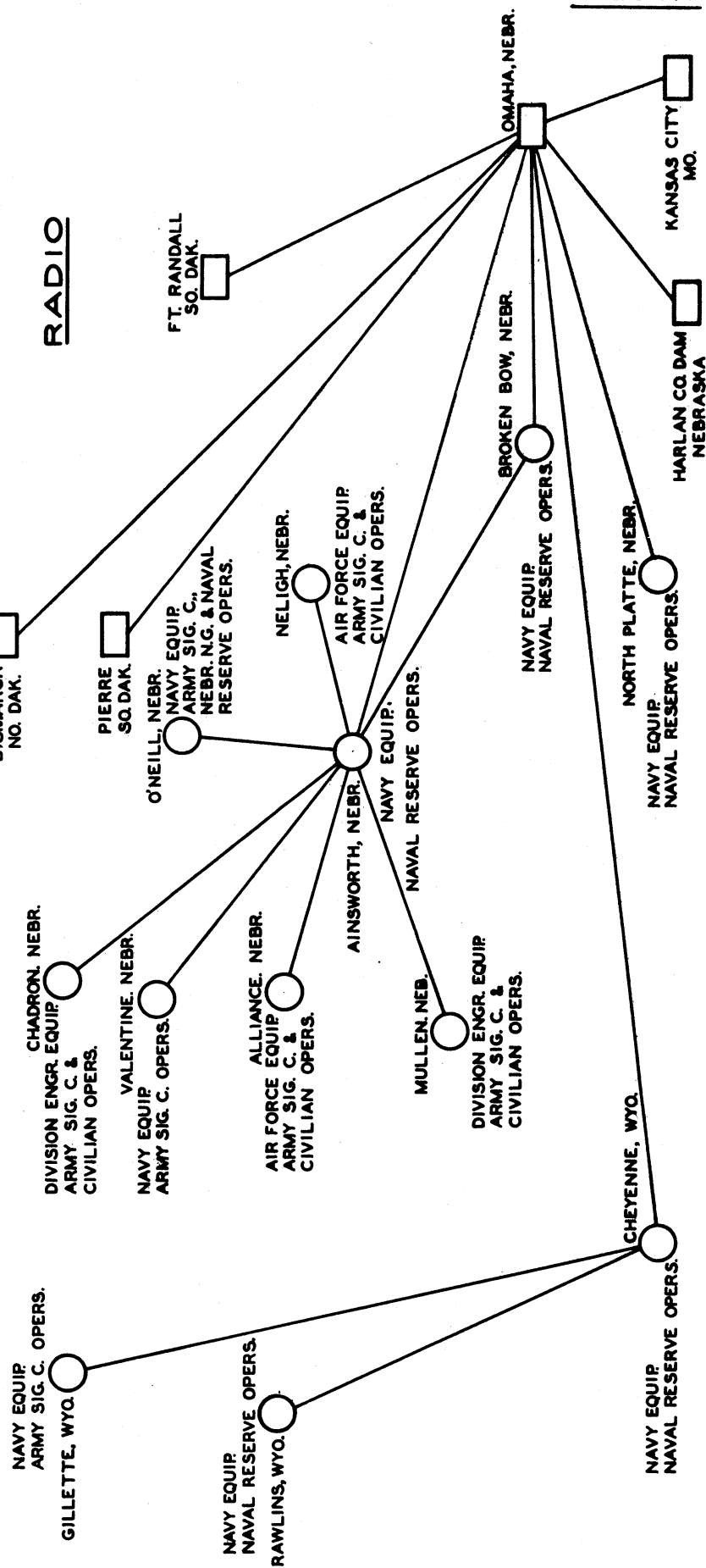
○ ADDITIONAL RADIO STATIONS INSTALLED FOR  
OPERATIONS SNOWBOUND

## HISTORY

## FIFTH ARMY DISASTER OPERATION

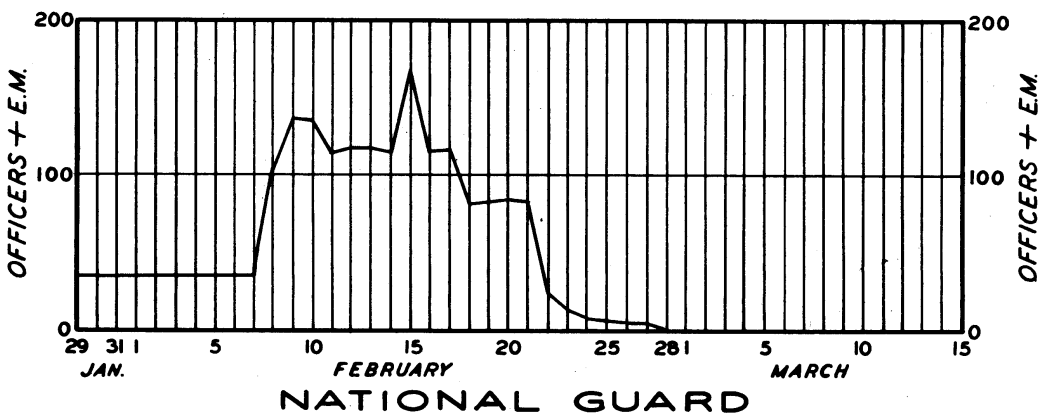
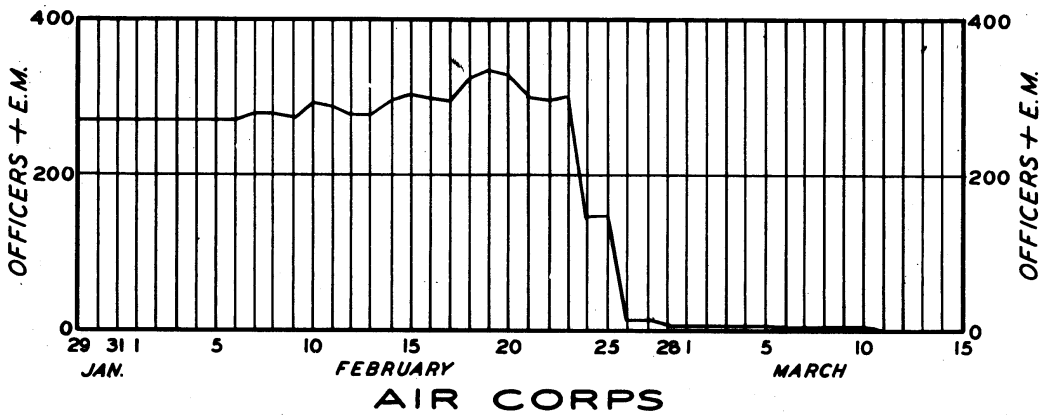
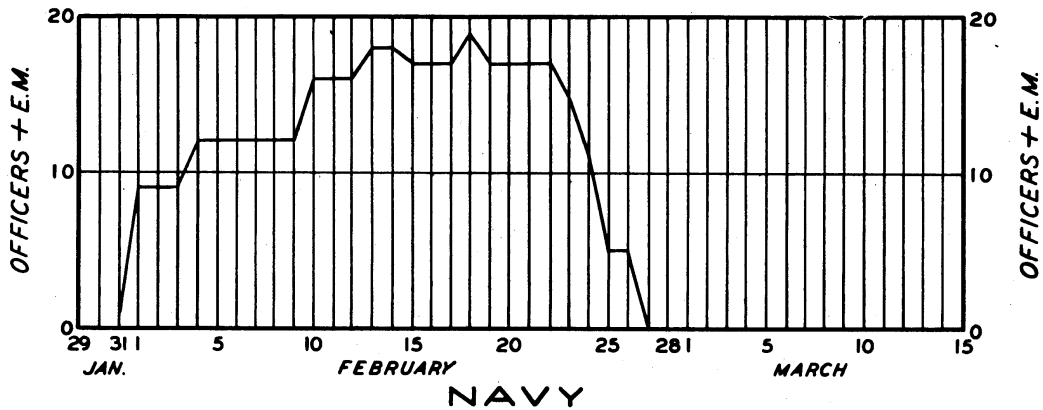
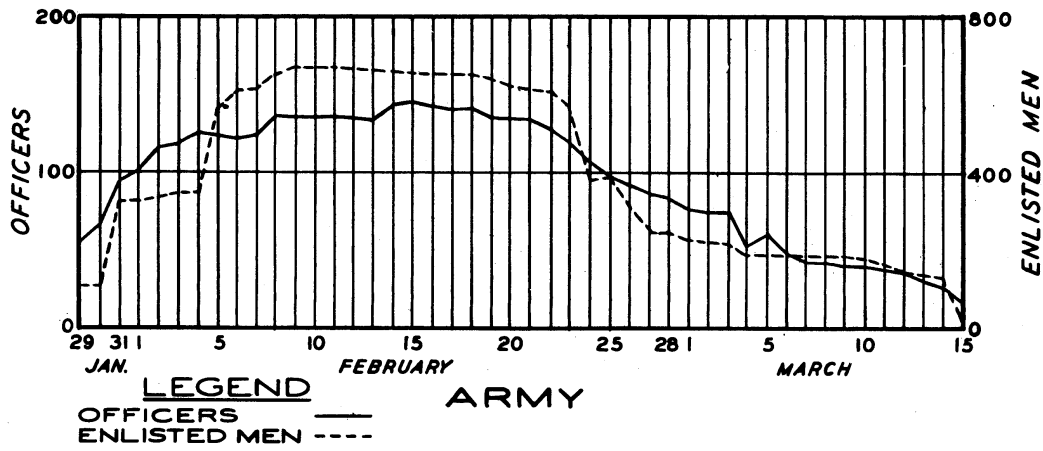
## "SNOWBOUND"

## RADIO

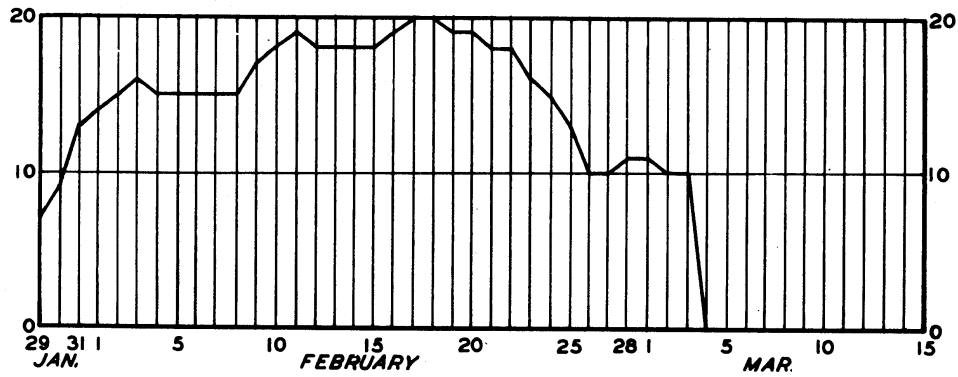


## COMMUNICATIONS

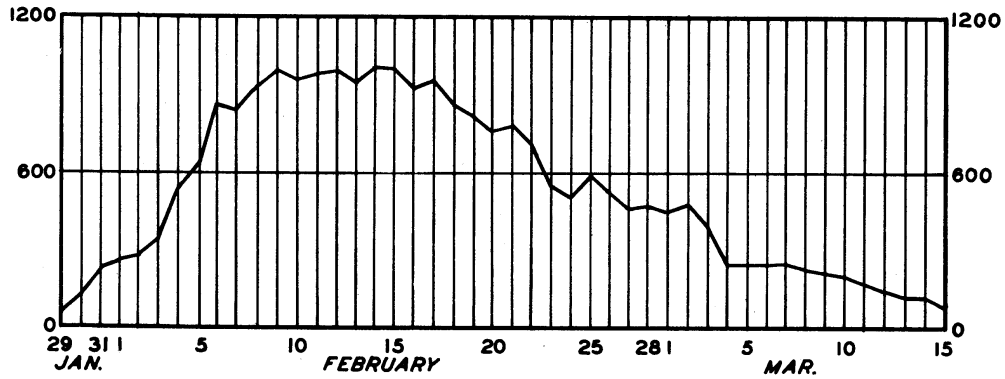




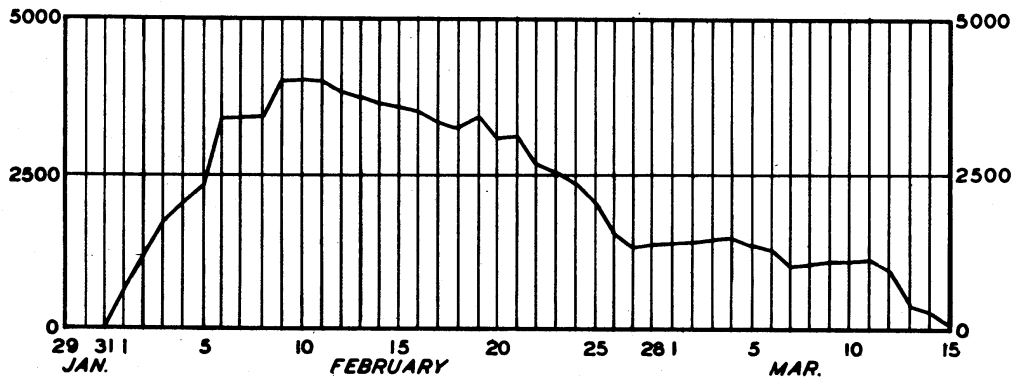
MILITARY PERSONNEL EMPLOYED



RED CROSS

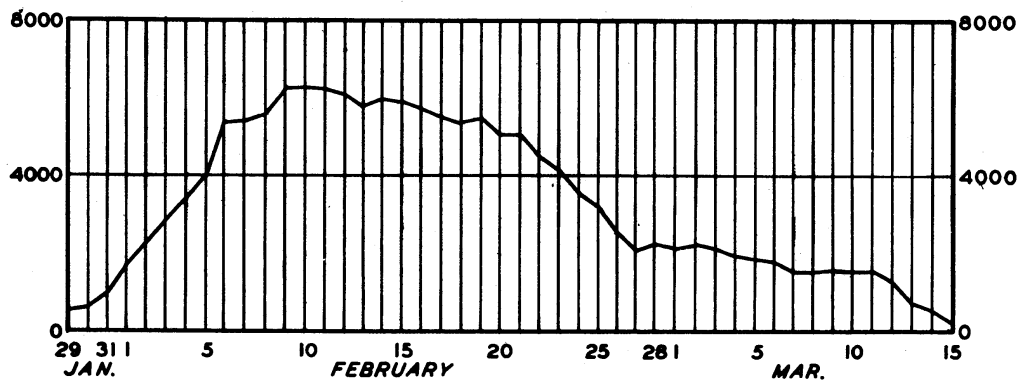


M.R.D. CIVIL SERVICE



CONTRACTORS

CIVILIANS EMPLOYED



TOTAL PERSONNEL EMPLOYED

# Sunday World-Herald

JANUARY 30, 1949

## Pick Was Ready Before Orders Received

By Max Coffey

While official Washington seethed with bureaucratic inaction on blizzard relief last week, Maj. Gen. Lewis A. Pick in Omaha was planning what he would do and how to do it if the Army tossed the job in his lap.

Early in the week he was ordered to assist Gov. Val Peterson by furnishing him with Army Engineer equipment and helping him locate contractors' machines.

He sent out three Army Engineer bulldozer teams and turned over a list of contractors

who have equipment.

But at the same time he sent out two reconnaissance teams of three men each to spot the critical points and collect data that would be needed in getting them opened up.

From each town where they stopped they telephoned their information back to Missouri River Division headquarters of the Corps of Engineers.

One team got to Anisworth and set up an office. The other went in through Broken Bow and is still going.

Meanwhile the Denver District of the Engineer Corps was carrying out the same procedure

in Wyoming and Western Nebraska.

Other reconnaissance was being carried out in South Dakota, and relief offices are being set up at Rapid City and Pierre.

As a result, General Pick had a pretty good idea of the job he faces when he finally learned Saturday that the job is his. And he was ready, with maps and personnel, to swing it into action.

But he had no delusions about it being easy.

"Operation Snowbound," he said Saturday afternoon, "is a job everybody's got to help out on."

## Warmer Due in State Today

### 25-30 Degrees Slated; Road Gains Made

It will be warmer today.

Dishing out the kind of forecast Nebraskans want to hear, the weather man predicted high readings just under the freezing level—from 25 to 30 degrees.

The forecast also called for increasing cloudiness, but there was no mention of snow. Monday partly cloudy and colder weather is expected.

It was 9 below zero in Omaha at 12:30 a. m. today.

State Maintenance Engineer John McMeekin Saturday gave an encouraging report on progress in clearing the state's snow-clogged highways.

#### No. 6, 77 Open

Open across the state, according to Mr. McMeekin, were Nos. 77 and 6.

Open for some distance, said the engineer, were:

No. 34 from McCook to the state line. That road was closed east of Lincoln, however, and between York and Grand Island.

No. 2 from Grand Island to Mullen.

No. 26 from Ogallala to the state line.

No. 275 from Omaha to O'Neill.

No. 20 from O'Neill to Valentine.

No. 81 from Chester to Norfolk.

No. 281 from St. Paul south to the state line.

Some minor roads were also open, Mr. McMeekin said.

Both the Burlington and Chicago & North Western Railroads reported their main lines in the north and northwest portions of the state blocked.

#### Another Death Here

Another death as a result of the heavy snow Thursday was counted by police here Saturday.

Louis Troudt, 71, of 4113 T Street, died at his home Saturday afternoon after shoveling his sidewalk.

The body was taken to the Knudsen Mortuary.

Five persons were overcome at Falls City, Neb., by fumes from an unvented gas heater. They were Mrs. Lola DeBusk and three sons, Gerald, 22, Gary Wayne, 11, and Larry Ray, 5, and Larry Curry, 5, who lived in an adjoining apartment.

The cold spell is expected to continue in Iowa, followed by more snow Monday.

## Will Fly Skis to West Nebraska

The Snyder Aircraft Corporation of Omaha will fly loads of skis to snowbound Western Nebraska today. The skis were to be picked up at Minneapolis by an Army B-17 and delivered to Offutt Air Force Base.

## 23 Towns Have Relief Offices

Norfolk, Neb. (AP)—Twenty-three north and northeast Nebraska communities had set up emergency relief headquarters by Saturday to aid snowbound farmers and ranchers.

They included: Albion, Battle Creek, Bloomfield, Coleridge, Creighton, Elgin, Laurel, Madison, Meadow Grove, Neligh, Norfolk, Newman Grove, Hoskins, O'Neill, Osmond, Pierce, Tilden, Plainview, Wausa, Winside, Bassett, Newport and Crofton.

Two school officials' meetings scheduled in Norfolk Monday have been postponed indefinitely, Dr. Allen P. Burkhardt, of Norfolk, announced.

They were a meeting of Big Ten Conference schools officials and a meeting of Class A and B school boards and superintendents to confer about teacher salary schedules for next year.

## Standard Signals Help Aid Missions

Ways for Nebraskans to signal to blizzard mission planes were outlined Saturday by Maj. James Hudelson of the Tenth Air Force.

He suggested use of panels about eight by three feet of any dark material. Boards, cloth or blankets may be used. These are the signals:

One panel—Medical attention needed.

Two parallel panels—Medical supplies needed.

Two panels crossed to form an X—Stranded, unable to proceed.

Panel forming an F—Food required.

Panel forming an L—Fuel needed.

Panel forming a double L—All is well.

Pilots cannot interpret waving from the ground, said the major. He cautioned parents to warn children not to make the signals in fun.

## Pleasure Drivers Urged to Stay Home

Lincoln (AP)—Brig. Gen. Guy N. Henninger, who is directing the blizzard disaster relief effort, Saturday urged pleasure drivers to stay off highways over the week end.

"Many of these trails are only one-car wide, and we need to keep the highways open for moving equipment into the disaster area," he said.

# The Wyoming Eagle

CHEYENNE, WYOMING, FRIDAY, FEB. 4, 1949

## 5,000 PERSONS ARE SAVED BY ARMY BULLDOZER CREWS

Chicago, Feb. 3. — (U.P.) — The world's biggest bulldozer operation has rescued almost 5,000 persons and 150,000 head of livestock in the frozen west, the army announced today in reporting a new fear—epidemic disease.

Maj. Gen. Lewis A. Pick, commander of "operation snow-bound" at Omaha, said his men and machines have cut through 1,097 miles of snow-clogged roads in the last 24 hours in Nebraska, South Dakota and Wyoming.

The fast-moving disaster force brought relief to 4,856 snowbound persons and fodder to 150,000 head of starving livestock.

A United Press survey showed 123 deaths attributable to the blizzards in 15 western states since the big blow of Jan. 2.

Pick said the army was turning its attention to the possibility of epidemic. Pneumonia and diphtheria already have broken out among the snowbound Navajo Indians of Arizona.

Col. J. C. Bain of the 5th army medical corps arrived in Omaha to work out a plan with the Red Cross for coping with persons needing medical aid.

"We are looking ahead for any eventualities," Pick said.

Air force haylift planes swept the ranges to drop more feed to marooned cattle and sheep while the great bulldozer army dug deeper into the huge snows left by the January blizzards.

At Alliance, Neb., two Nebraskans died when their plane hit a power line and crashed into a farmhouse while on a mercy flight to a marooned family. Their deaths were the first in the hundreds of flights made in the west.

Snow flurries hit part of Idaho, Utah and Nebraska and in the mountains of Colorado today. But the weather generally was clear in the disaster area, forecasters reported.

# THE RAPID CITY DAILY JOURNAL

*"The Newspaper of Western South Dakota"*

RAPID CITY, S. D., FRIDAY, FEBRUARY 4, 1949

## 'Operation Snowbound' Hits Rapid Pace; Livestock Loss May Be Less Than Expected

Pierre, Feb. 4 —(P)— The Fifth army's Operation Snowbound smashed ahead in western South Dakota today, liberating new areas from the grip of winter.

Area officers in charge reported that in the 24 hours ended at 6 o'clock last night they had opened 1,344 miles of road, contacted 887 isolated families, liberated 35,050 cattle, 15,100 sheep and 2,750 "assorted other livestock."

There were 161 officers, enlisted men and civil service personnel in the operation. They helped to man 182 pieces of equipment.

The report contained a hopeful note in an observation that loss among livestock reached yesterday did not appear to be as high as had been expected. It was estimated at about four percent.

Lt. Col. H. A. Morris, in charge of the area under Maj. Gen. Lewis A. Pick as deputy commander of the Fifth army, said army weasels traveled 321 miles yesterday, supplying food and fuel to 31 families. Planes flew five missions with food fuel and tractor parts.

Weather "definitely favored the operation," he said.

Four rotary snowplows sent by Minnesota to augment equipment already at work arrived in Pierre during the night and immediately were sent to the Faith-Dupree area, in northern Ziebach and northeastern Meade counties.

Well over 100 pieces of state equipment were in the fight.

### Heavy Traffic

Brig. Gen. Theodore Arndt of the South Dakota national guard said that during a trip from Rapid City to Pierre, he observed heavy traffic by ranchers seizing upon open roads to haul hay and water.

Meanwhile, Gov. George T. Mickelson utilized part of his monthly radio "Report to the People" to urge ranchers to take advantage of newly opened roads for stocking-up purposes.

A lot of winter remains, he reminded them, and roads can close quickly, isolating them again. Adequate stocks of food, fuel and other necessities to carry them over a possible further period of isolation should be considered a "must."

Rapid City, S. D., Daily Journal  
Saturday, February 5, 1949

♦ ♦ ♦

## Army Reports Biggest Storm Relief Advance

Pierre, Feb. 5 —(P)—The Fifth army reported today its biggest advance yet in western South Dakota's operation snowbound.

Bulldozers and other equipment pressed ahead throughout the area estimated at 40,765 square miles to open 2,047 miles of road, reach 1,488 families and liberate 47,700 cattle.

A total of 22,500 sheep and 1,050 other livestock also found paths to feed and water open, Col. H. A. Morris, in command of the Pierre sub-district under Maj. Gen. Lewis A. Pick, reported.

Since the Fifth army began its operation snowbound Wednesday, it has rolled up these statistics:

Liberated 3,304 families, cleared 4,915 miles of road, reached 137,500 cattle, 37,600 sheep and 3,800 other livestock such as horses and hogs. Fourteen mercy missions have been completed by army weasels which have covered 1,150 miles and supplied 116 families with food and fuel.

Yesterday the weasels covered 374 miles, supplying 19 families.

The army's operation, which embraces 1,088 personnel and 221 pieces of snow-removal equipment, found no deaths among snowbound persons yesterday. One injured man was carried from a ranch near Faith into that town for treatment.

## Morning World-Herald

Published every week-day morning at World-Herald Square, Omaha, Nebraska. Entered as second class matter at Omaha Postoffice under act of 1879. Member Audit Bureau of Circulation.

G. M. Hitchcock, Founder Publisher, 1885-1934

WORLD PUBLISHING COMPANY, OWNER

Henry Doorly, Pres. and Pub.; H. E. Newbranch, Editor-in-Chief; B. H. Cowdery, Assistant Publisher; W. E. Christenson, Editor; Joseph F. Breeze, Bus. Mgr.; Frederick Ware, Managing Editor.

The Associated Press is exclusively entitled to the use for republication of all the local news printed in this newspaper, as well as all AP news dispatches.

Mail Rates in Nebraska and Within 300 Miles of Omaha  
 Year 6 Months 3 Months Month  
 Daily without Sunday.....\$9.50 \$5.00 \$2.50 \$1.00  
 Sunday only ..... 6.50 3.25 1.63 .66

SWORN NET PAID CIRCULATION FOR JANUARY, 1949

	Daily	Sunday
City .....	94,716	83,183
Suburban .....	48,887	43,132
Country .....	94,676	101,858
	235,279	228,795

### ONE WEEK IN HISTORY

This was a week of trials and tribulations. The trials included the legal variety. It was also a week in which some trends were shaping up on the American political scene.

#### Operation Snowbound

Here in the United States the No. 1 news story continued to be the Plains States blizzard but near despair had given way to hope as close to a thousand snow-moving vehicles—bulldozers and plows and trucks—chewed away at the giant drifts. The Army was doing a magnificent job, as all agreed. More than a thousand miles of blocked road had been opened in Nebraska, South Dakota and Wyoming. Five thousand isolated people had been rescued. More than 150 thousand cattle had been given access to feed.

The Army could not do it all, however. In Nebraska, Governor Peterson appealed to the people to help themselves through community effort. Nebraska is still not out of the drifts—and the winter is far from over. To every Nebraskan the question of the week was: Will there be more snow?

## Evening World-Herald

Published every week-day evening at World-Herald Square, Omaha, Nebraska. Entered as second class matter at Omaha Postoffice under act of 1879. Member Audit Bureau of Circulation.

G. M. Hitchcock, Founder Publisher, 1885-1934

WORLD PUBLISHING COMPANY, OWNER

Henry Doorly, Pres. and Pub.; H. E. Newbranch, Editor-in-Chief; B. H. Cowdery, Assistant Publisher; W. E. Christenson, Editor; Joseph F. Breeze, Bus. Mgr.; Frederick Ware, Managing Editor.

The Associated Press is exclusively entitled to the use for republication of all the local news printed in this newspaper, as well as all AP news dispatches.

### WEEK-END REPORT

In Nebraska this week the big news was still Operation Snowbound. True, there was important news elsewhere—in Moscow, in Washington, in Belgrade, in Lincoln. But to many Nebraskans these were things remote. The drifts in front of their eyes took all their attention.

#### Providence Needed

The new commander of the Battle of the Blizzards, Maj. Gen. Lewis A. Pick, appeared to be making astonishing progress in his first job—assembling equipment.

From all over the Middle West, plows, weasels and bulldozers were rolling into the State.

The great machines were hitting the snow on all fronts in one of the most complex operations since the war.

The snow-fighters needed Providence on their side. Most open roads are simply ditches through the snow. A two-inch fall of new snow, with wind, fills these cuts and blocks them.

Even a wind with no new snow means trouble. For example, there is the story of a rotary plow that started through a long drift followed by 30 cars. Wind blew snow back into the cut so rapidly that the cars at the end of the line got stuck, and the plow had to turn back to rescue them.

# Sunday World-Herald

## Editorial Section

OMAHA, NEBRASKA, FEBRUARY 6, 1949.

The Week in Review—

## Snow Still Week's Top Story; Stalin Peace Bid Top Mystery

By Victor P. Hass

"How long can people stand it?"

Assistant Secretary of Army Gordon Gray asked that question last week after returning from an aerial survey of the blizzard area.

It seemed to hit to the core of Operation Snowbound as rugged Nebraskans fought to get out from under one of the most tremendous storms within memory.

Most Nebraskans did stand it, fighting back with courage and resourcefulness that excited admiration.

Neighborliness was the keynote and as the stories kept coming in it appeared that there were no lengths of hardship or sacrifice to which their fellow men would not go to release them from the "chill embargo of the snow."

And behind them was the United States Army, with Maj. Gen. Lewis A. Pick as generalissimo, striking off icy shackles by combatting towering drifts and reopening roads.

No other story of the week could come up to this battle for survival from a great natural force. And if Nebraskans were not only "standing it" but doing so without complaint, it was no surprise to more fortunate Nebraskans who have not been subjected to the ordeal. From the best you expect the best.



The Republican  
Valentine, Nebraska  
February 10, 1949

## Operation Snowbound Now Nearing Mopping-Up Stage

**Crews Opening 250  
Miles of Roads  
Per Day**

With an assist from Mother Nature, in the form of a continuation of reasonably good winter weather, the Army was nearing the mopping-up stage in "Operation Snowbound" in this area today. By "this area" we mean the territory which is being taken care of through the local office of the Court House. This includes the north two-thirds of Cherry County, a strip 90 miles long and 25 to 30 miles wide in South Dakota and some areas in the south one-third of Cherry County and the east part of Sheridan County.

At last report an estimated 2000 miles of roads and trails had been opened in the area and an average of 250 miles per day in addition were being opened. It was estimated that 150,000 cattle and from 4000 to 5000 stacks of hay had been liberated from the drifted snow. In addition, there had been no emergencies reported for several days.

Engaged in this tremendous operation were 89 pieces of motorized equipment which included 47 bulldozers and also four "Weasels" now stationed in Valentine, plus trucks and other vehicles. Operating this equipment were 54 army enlisted personnel, 68 civil service personnel, 117 contractors, 12 Navy personnel and 5 Forest Service employees.

The operation is being carried on under the direction of Major Geo. P. Jones and Capt. R. J. Plue, who replaced Capt. Richardson last week when the latter was called home due to injuries of his daughter. These officers are being assisted by numerous local officials, businessmen and other interested parties.

Now that roads or trails have been opened to practically every farm or ranch in the area, liberation of cattle and feed and clearing of yards will be stressed. It is expected that all established roads will be opened before the operation is completed. This may take another thirty days.

The Republican joins all residents of this area in congratulating the army on their achievement. Not only have they carried on their work in an efficient manner, but they have also conducted themselves like the gentlemen they are. We are happy to have them with us at this time.

# THE WHEATLAND TIMES

---

WHEATLAND, WYOMING, THURSDAY, FEBRUARY 17, 1949

---

## **IN APPRECIATION**

**We, the County Commssioners and the Livestock men of Platte county are deeply grateful for the very timely and fine cooperation of the 5th Army in their "Operations Snow-bound" in Platte county.**

**The efficiency of the personnel, the high type operators and fine equipment sent into Platte county during our emergency saved further human suffering and livestock losses.**

**Platte County Storm Relief Committee**

FRANK DUNCAN, PRESIDENT

R. F. NELSON, VICE-PRESIDENT

F. H. GATES, SECRETARY

MERLE HARRIS, TREASURER

## *The Gordon Chamber of Commerce*

DIRECTORS

S. D. BERKHEIMER  
FRED CHAMBERLIN  
FRANK DUNCAN  
FRED FITCH  
ROSS MAGOWAN

AFFILIATED WITH THE CHAMBER OF COMMERCE OF THE UNITED STATES

DIRECTORS

R. F. NELSON  
LEO WESTCOTT  
F. H. GATES  
MERLE HARRIS

*Gordon, Nebraska* February 16, 1949

General Lewis E. Pick.  
Div. Commander Corps Engineers  
Farm Credit Bldg.  
Omaha, Nebraska.  
Dear Sir:

As a Chamber of Commerce we wish to thank you and your entire staff for the efficient way in which you handled "Operation Snowbound". You fellows all have done a fine job, and we appreciate it. And there is no way in which to evaluate the good your men done for us in this part of the state.

We also wish to mention the fine quality of personnel billeted in perhaps a hundred homes in this community. They were a fine bunch of fellows.

Again thanking you for your courtesys during the past, we remain

Yours very truly,

Gordon Chamber of Commerce.

Folsen H. Gates, Secty.

## RESOLUTION

There having arisen in Antelope County, Nebraska, an emergency because of the continuous blizzard conditions through November, December, and January, and Antelope County, Nebraska having been placed in an emergency area by the United States Fifth Army and the Governor of the State of Nebraska and there having been sent into Antelope County, Nebraska bull dozers, snow plows, weasels, airplanes, emergency machines, army officials, operators and personnel, and there having been a great amount of assistance and relief furnished those persons and animals snowbound and suffering in said County, and the County Board of Supervisors of Antelope County, Nebraska, setting in regular session in the February, A. D., 1949 term thereof and wishing to thank all of those persons having a part in said relief operation and to do it officially,

BE IT RESOLVED, by the Board of County Supervisors of Antelope County, Nebraska, setting in a regular session on this 16th day of February, A. D., 1949, that we as such Board extend our sincere thanks and appreciation to the United States Fifth Army, General Lewis Pick, Major Francis McKay, and Captain Burrows, and all of their assistants, and Governor Val Petersen for the splendid and courteous operations and assistance in Antelope County, Nebraska, during the said emergency.

I move the adoption of the above and foregoing resolution on this 16th day of February, A. D., 1949.

D. H. Mc Lee

I Second the above and foregoing motion.

Harvey A. Larsen

Those in favor of the motion as made and seconded vote personally.

Yeas

Nays

Wm. M. Mitchell  
Carl Berry  
Clarence Coulthard  
Harvey A. Larsen  
D. H. Mc Lee  
Wm. W. Wylie

\_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

LESTER C. HUNT  
WYOMING

COMMITTEES:  
ARMED SERVICES  
RULES AND ADMINISTRATION  
DISTRICT OF COLUMBIA

**United States Senate**  
WASHINGTON, D. C.

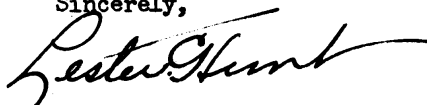
February 17, 1949

Dear General Pick:

Am in receipt of your telegram of yesterday in answer to mine of even date, and may I express my appreciation for your prompt reply and, also, avail myself of this opportunity, in behalf of all the people of Wyoming, to express thanks and gratitude for the splendid work done by the Army in Operation Snowbound. Without question of doubt, the losses of livestock, as well as human suffering and perhaps the loss of life would have been far greater had the Army not stepped in and done the wonderful job that it did.

With very best wishes and kindest regards, I am

Sincerely,



Major General Lewis A. Pick  
Division Engineer  
Corps of Army Engineers  
Omaha, Nebraska

WESTERN  
UNION

WESTERN  
UNION

WUAS192 PD

CH LINCOLN NEBR FEB 25 452P

WESTERN  
UNION

MAJOR GENERAL LEWIS A PICK

OPERATION SNOWBOUND

WESTERN  
UNION

CONCUR CLOSING DISASTER RELIEF CUMING CEDAR WAYNE DAKOTA COUNTIE

2400, 25 FEBRUARYC THURSTON COUNTY 1200, 26 FEBRUARY: DIXON

2400 26 FEBRUARY. MY PERSONAL THANKS AND THE GOOD WISHES OF

ALL THE PEOPLE OF NEBRASKA FOR AN OUTSTANDINGLY FINE JOB DONE

EFFICIENTLY AND EFFECTIVELY. WE ARE ALL YOUR DEBTORS AND THE

GOOD WISHES OF ALL NEBRASKANS GO WITH YOU IN YOUR NEW

UNDERTAKING

WESTERN  
UNION

VAL PETERSON GOVERNOR OF NEBRASKA

530P

ESTERN  
UNION



GEORGE T. MICKELSON  
GOVERNOR

PIERRE

4 March 1949

Colonel Louis W. Prentiss  
Acting Division Engineer  
Corps of Engineers  
1709 Jackson Street  
Omaha 2, Nebraska

Dear Colonel Prentiss:

May I extend to you and the officers and enlisted men of your command our sincere appreciation for the assistance rendered us during the recent snow disaster.

The work which the men of your command carried out was performed in a very creditable manner and they deserve the highest commendation for their activities.

Lt. Col. Howard A. Morris and Lt. Col. J.L. Lewis with whom I had direct contact on operations "snowbound" were most cooperative and gave careful attention to every request.

Sincerely yours,

*George T. Mickelson*  
Governor

## SENATE RESOLUTION 3

(Olson of Mountrail and Bilden)

A resolution of appreciation for the efforts of the Corps of Army Engineers and the Federal Works Agency during present emergency conditions in North Dakota and urging the continuation of emergency aid until assurance of the termination of emergency conditions in the more remote localities is received.

WHEREAS, emergency storm conditions in North Dakota have endangered life and property and caused widespread suffering, and

WHEREAS, the extent of the emergency has exceeded the scope and resources of local agencies, and

WHEREAS, the efforts and assistance of the Corps of Army Engineers and the Federal Works Agency have been of immense service in alleviating suffering and are vitally necessary, and

WHEREAS, the greatest need exists in the more remote sections where outside contact even by radio may have terminated,

NOW, THEREFORE, BE IT RESOLVED, by the Senate of the State of North Dakota that we hereby commend and express our appreciation of the valuable services rendered by the Corps of Army Engineers and the Federal Works Agency and urge that aid be continued in each county as may be necessary, that aid be not discontinued in any county until certain assurance has been received that emergency conditions no longer exist in any part of such county, and that other counties not presently recognized as in the emergency zone be added, if found necessary.

BE IT FURTHER RESOLVED, that copies of this resolution be transmitted by the Secretary of the Senate to General Pick, Army Engineers, Omaha, Nebraska, Colonel Seybold, Army Engineers, Fort Lincoln, North Dakota, Major General Fleming, Federal Works Administration, Washington 25, D. C., and to Honorable Fred G. Aandahl, Governor of North Dakota.



Thirty-first Legislative Assembly, State of North Dakota, begun and held at the Capitol in the City of Bismarck, on Tuesday, the fourth day of January, one thousand nine hundred and forty-nine.

HOUSE RESOLUTION G  
(Dalzell and Seibel)

A resolution of appreciation for the efforts of the Corps of Army Engineers and the Federal Works Agency during present emergency conditions in North Dakota and urging the continuation of emergency aid until assurance of the termination of emergency conditions in the more remote localities is received.

WHEREAS, emergency storm conditions in North Dakota have endangered life and property and caused widespread suffering, and

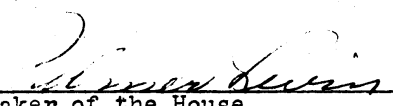
WHEREAS, the extent of the emergency has exceeded the scope and resources of local agencies, and

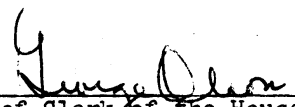
WHEREAS, the efforts and assistance of the Corps of Army Engineers and the Federal Works Agency have been of immense service in alleviating suffering and are vitally necessary, and

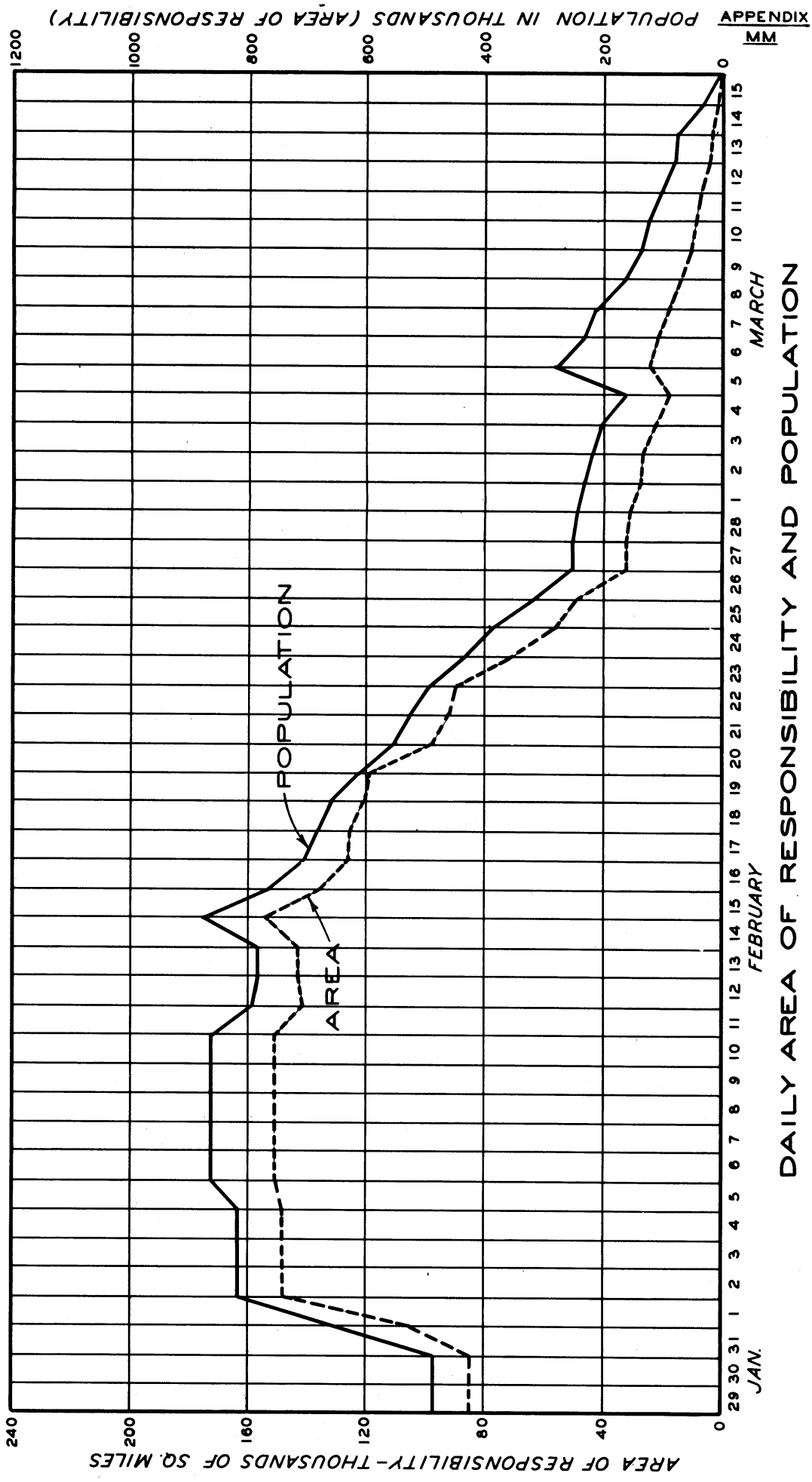
WHEREAS, the greatest need exists in the more remote sections where outside contact even by radio may have terminated,

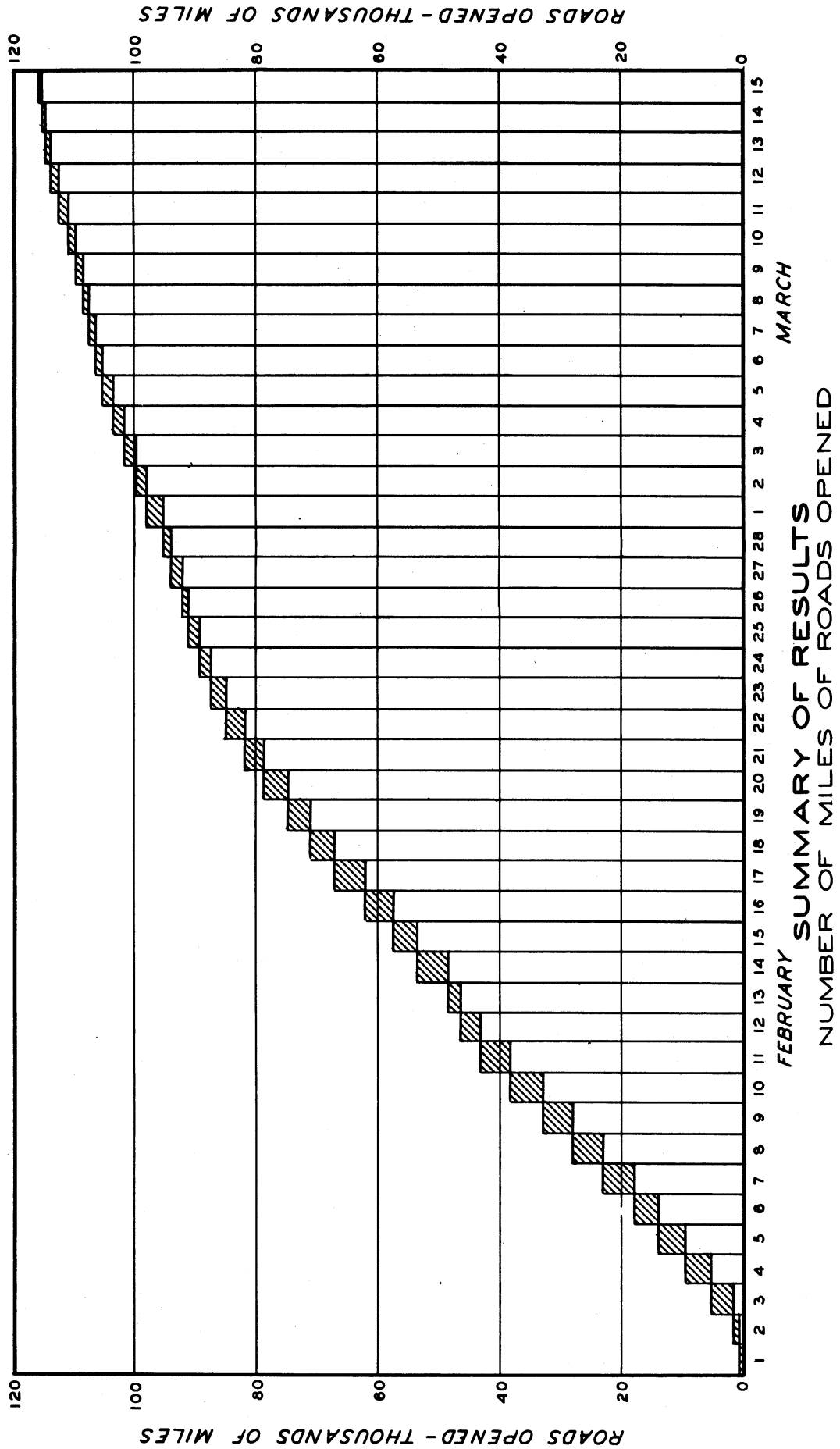
NOW, THEREFORE, BE IT RESOLVED, by the House of Representatives of the state of North Dakota that we hereby commend and express our appreciation of the valuable services rendered by the Corps of Army Engineers and the Federal Works Agency and urge that aid be continued in each county as may be necessary, that aid be not discontinued in any county until certain assurance has been received that emergency conditions no longer exist in any part of such county, and that other counties not presently recognized as in the emergency zone be added if found necessary,

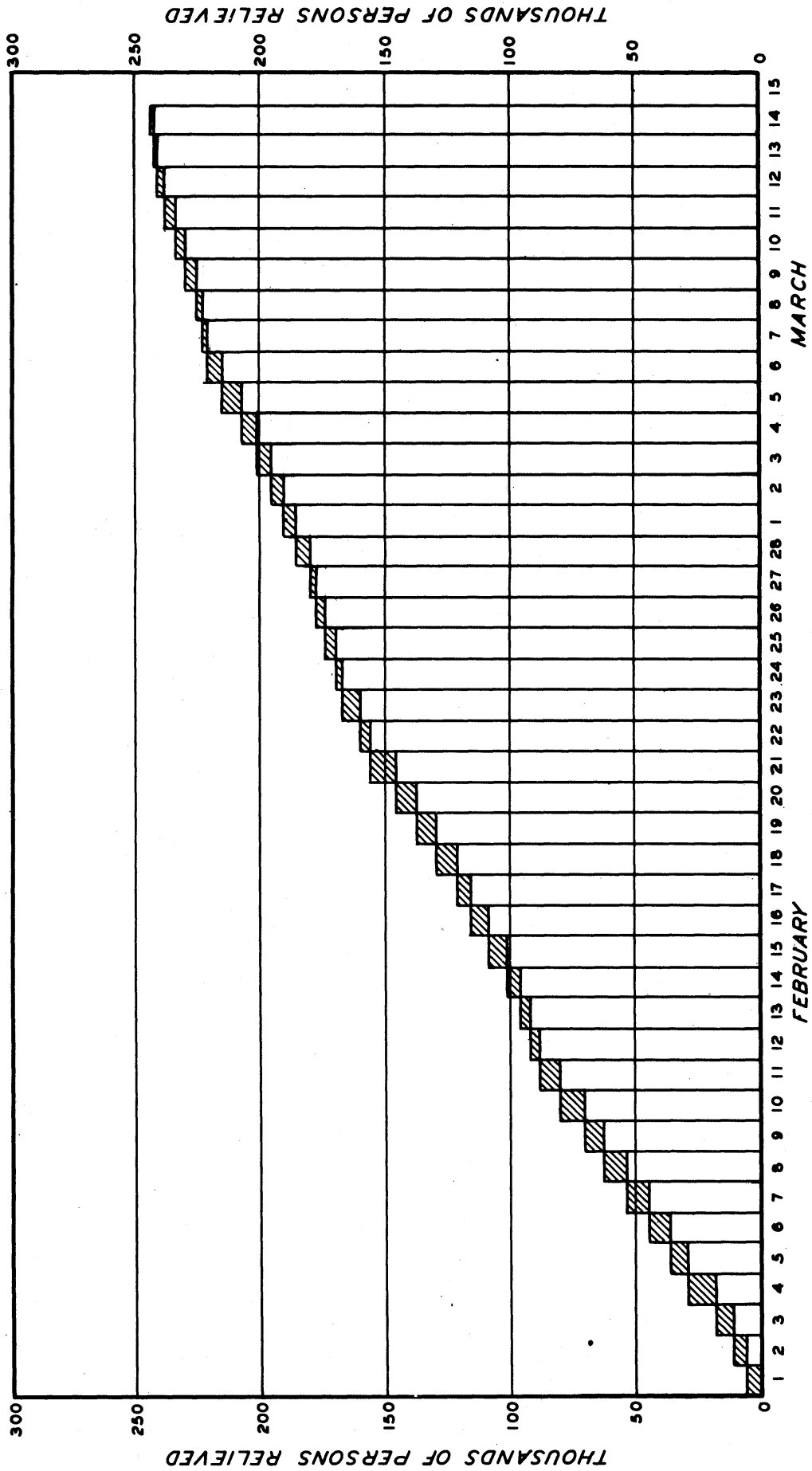
BE IT FURTHER RESOLVED, that copies of this resolution be transmitted by the Clerk of the House of Representatives to General Pick, Army Engineers, Omaha, Nebraska; Colonel Seybold, Army Engineers, Fort Lincoln, North Dakota; Major General Fleming, Federal Works Administration, Washington 25, D. C.; and to Honorable Fred G. Aandahl, Governor of North Dakota.

  
Speaker of the House

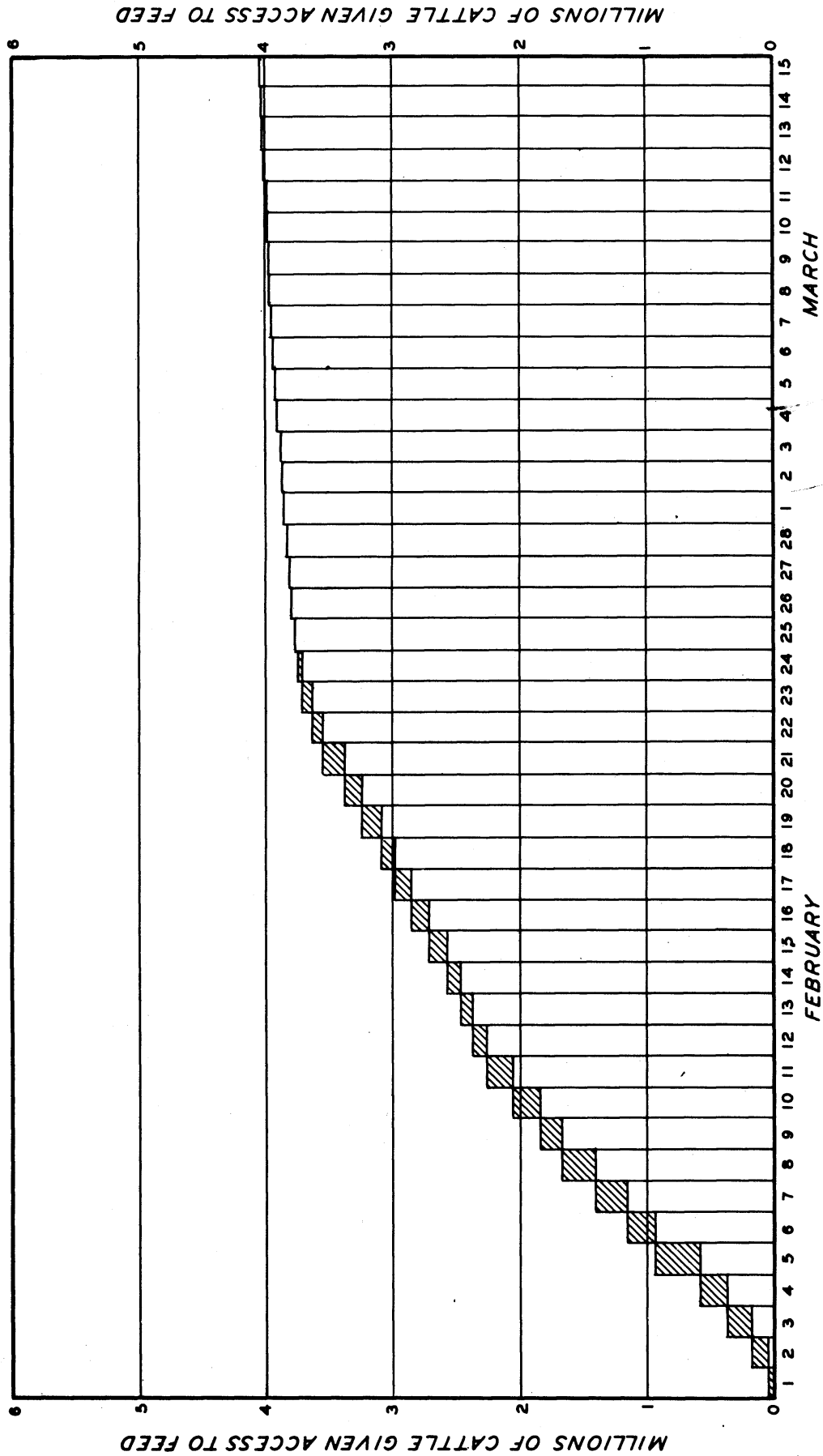
  
Chief Clerk of the House



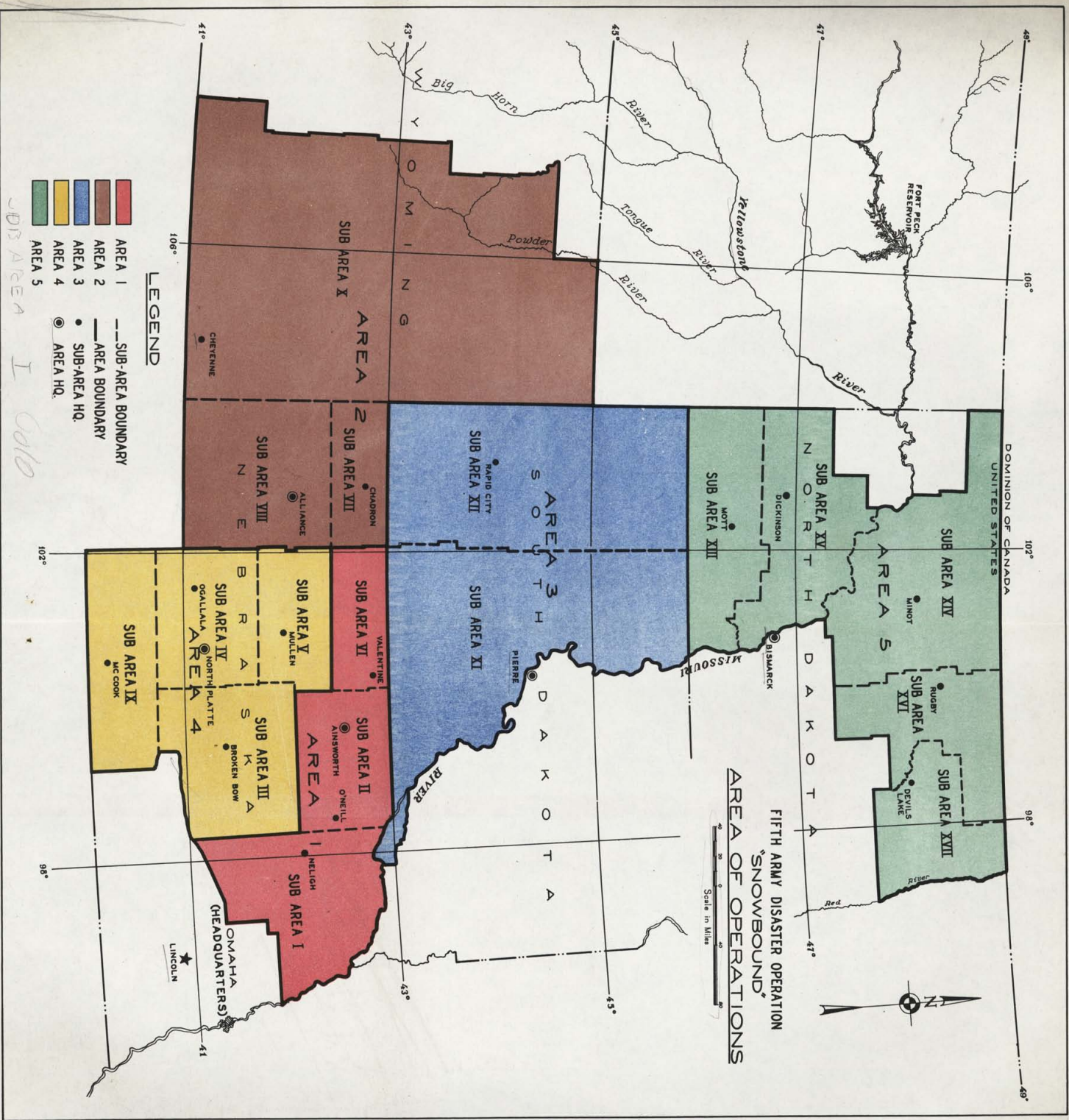




SUMMARY OF RESULTS  
NUMBER OF PERSONS RELIEVED



SUMMARY OF RESULTS  
NUMBER OF CATTLE GIVEN ACCESS TO FEED



UDS AREA I Colo